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ABSTRACT

This handbook, prepared through the Anthropology Curriculum Study Project in Chicago, Illinois, is designed to accompany the secondary level textbook, "The Emergence of Civilization" (SO 012 148) written in 1964. The textbook emphasizes the comparison of the patterns of culture change which resulted in complex societies (civilizations) in six different areas throughout the world. The textbook stresses problem solving and is centered around three questions: In what manner and through what stages did these civilizations evolve? What characteristics of each region promoted this emergence? What is civilization? The six chapters of this handbook provide supplementary readings, daily schedules, commentary on the material, homework assignments, and class activities. Chapter I provides methods for acquainting students with the main objectives of the book and with archeological terms. Chapter II emphasizes the sequence of events in the emergence of a civilization. Chapters III and IV present case studies of Mesopotamia and Peru. In Chapter V student groups compare the previous case studies with either Egypt, the Indus Valley, China, or Middle America. Chapter VI concentrates on theories about the origin of civilization. The emphasis is on students' comparing their own hypotheses with major theories. A glossary of archeological terms is included. (KC)

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Handbook

for

The Emergence of Civilization

by

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SO 012 147

This version of the Handbook was prepared for experimental use during the school year 1964-5, by the Anthropology Curriculum Study Project, 5632 Kimbark Ave., Chicago Illinois 60637

TASK OF THE EMERGENCE OF CIVILIZATION
and
PURPOSE OF THE HANDBOOK

It is not uncommon in world history classes for students to "learn about" early civilizations. This book directs the energies of the students in somewhat different and more sophisticated directions. The central problem posed by the book is that of comparing the patterns of culture change in six different areas of the world that resulted in the development of complex societies called, here, civilizations. There is much descriptive material in the book, but it is not there to be memorized. It is there to be used in the job of comparing. This is a respectable scholarly problem, and one that continues to engage the attentions of archeologists.

The purpose of the Handbook is to help the teacher see and carry out the central intellectual task of the book. This task involves an answer to three basic questions: In what manner and through what stages did these civilizations evolve? What characteristics of each region promoted this emergence? What is civilization? Each of these questions represents a problem which the individual student will attempt to solve, aided by his classmates and the teacher. Although this problem-solving approach remains the primary aim of this unit of study, some students may develop an interest in one, or more, of the civilizations for its own sake. Such an interest is not antagonistic or irrelevant but complementary to the aims of the book. The Handbook, however, is weighted towards the problem-solving goal and the procedure reflects this emphasis.

A handbook to accompany the text was considered useful because many teachers were unfamiliar with cultural history and most have not had sufficient exposure to archeology or cultural anthropology to buttress their teaching of a unit on the emergence of civilization. A handbook was further considered as desirable if the Anthropology Curriculum Study Project was to obtain reports from the participating teachers which could be readily compared and the effectiveness of the unit more accurately measured. Accordingly, this Handbook provides a broad spectrum of commentary upon the material in the book, ranging from specific suggestions about homework assignments and class activities to larger questions which have puzzled archeologists and historians for at least a century, and hopefully, will also provoke thought and controversy among your students. The recommendations contained in the Handbook are suggestions, not authoritative utterances. They are designed to lead towards an understanding of the principal intellectual tasks established for this unit. The authors of these suggestions have had but one previous experience in teaching The Emergence of Civilization. If their commentary provokes thought and stimulates controversy among teachers participating in the experiment, it is believed that the students will be the ultimate benefactors of this conflict of opinion.

The chapters of "The Emergence" are seen as falling into three sections, and the material is bound in separate books so that each section can be given to the students when they are ready to use it. Indeed, only the first, main book should be distributed at the beginning of the course, and the others as they are reached in the Handbook.

A. The first section is the book consisting of Chapters I - IV — two introductory chapters and two Case Studies of the Emergence: Mesopotamia and Peru. The entire class will be involved with all the material.

B. The second section of the material has come to be called Chapter "X" because the students will not all be reading the same material. It consists of four Case Studies: Egypt, the Indus, China and Mesoamerica. Handbook Chapter 5 introduces this section. The plan here is to ask each student to become expert in one of the four Case Studies (his Chapter "X") — as well as learning from his classmates about the other three. The hope is to avoid the problem of taking the whole class through all six Cases but still give each student at least a three-way view of the

Emergence. This third case ("X") is important because it avoids the "either or" conclusions which result from knowing only two cases. At the end of this section comes an interlude for student hypothesizing about the Emergence as they have been able to witness its development.

C. The third section "Thinking About the Growth of Civilization", and Handbook Chapter 6, consider several theories about the origins of civilization. Up to this point the emphasis has been upon the students' explanation of the evidence with no attention to what scholars have thought. In this final chapter there is a change of emphasis. The students can now compare their hypotheses with the major theories held within the last one hundred years about the causes for the rise of civilization. They may, however, be able to do much more than make a comparison of their views with those of the scholars.

They may perceive that our understanding of the origins of civilization has greatly changed. A century ago men thought in terms of single explanations which involved an answer to "why" questions; today, we think in terms of multiple causes which involve "how" questions. The impact of evolution will not be unfamiliar to those students who know about the history of biology; that man's thinking about his own past also goes through an evolutionary process may be a new observation for some students.

They may perceive that although several theories may co-exist, they are not necessarily equally valid. Students will probably want to know what is the "right" theory, or at least, what theory the teacher ascribes to. They may discover that this quest is deceptively simple and that we are only able to say that one theory is superior to another because it considers new evidence which the older theory overlooked.

Students may also perceive that the scholar-scientist possesses at least one paradoxical quality: he must be able to support his point of view with strong arguments yet also acute enough to realize that new data may compel him to revise the views which he presently advocates. This blending of conviction with open-mindedness can only be inferred from the chapter but it might be considered a worthwhile result if students could gain some understanding of this quality from their study of the emergence of civilization.

Finally, the students can be helped to see that being expert and being "an expert" are different. The former term implies knowing something well; the latter suggests some exclusive knowledge or skill. But in either case, close acquaintance with beautiful and satisfying objects — pottery and textiles, architecture and carvings — and with new ideas, can be the student's as well as the scholar's reward.

Chapter 1

Introduction

This being the first chapter, and the introduction, it is the place for the student to become well acquainted with the main objectives of the book.

Thinking about Civilization introduces the idea of "civilization" and focuses on a particular way of life with certain identifiable characteristics. This section also confronts the student with the problem of determining how civilization "got started." It further identifies the six earliest centers, those areas of the world which are the only places we know of where this quality of life emerged from an earlier and fundamentally different way, generally called "primitive." It has been found helpful to point out at the beginning of this book that these words, "civilized" and "primitive," are used technically. Students often attach values to these words: "civilized" is good, "primitive" is inferior. In the text these words are used to distinguish between different styles or qualities of life. They do not carry just an evaluation of "goodness" because that always requires determining "good for what?"

The remaining sections of the chapter are a description of what an archeologist does. They acquaint the student with the ways in which information is literally unearthed, analyzed, and interpreted, when one must do this without the benefit of written evidence. An important part of the motivation can take place here. The objectives all call for problem-solving: search, sifting and ordering of facts, probing, discovery, interpretation. In short, detective work. Therefore, the approach of students and teacher will be similar to that of the archeologist-detective himself. In the process of reading about what archeologists do, the students will be drawn into that activity as well as understanding more fully the objectives themselves. It is hoped that, in a subtle way, they will develop the scientific attitude necessary for dealing with problems involving an understanding of people and of societies.

1. The objectives of the book are significant only when the student has become fully aware of the differences between primitive and civilized cultures. And yet, he must also see that primitive and civilized cultures are fundamentally related; that one emerged from the other. One helpful approach to understanding this is first to define culture, then to clarify and dramatize the characteristics of primitive life. The following suggestions about getting these ideas across are recommended as most effective when presented in the order given. This allows the student to see first and foremost the common characteristics of all of mankind. After that is understood, the differentiation can begin: examining the contrasts between two general categories of lifeways: primitive and civilized. This second understanding can make more urgent the questions which form the main objectives of the book.

1.A. Culture

The important idea here is that understanding culture as a universal quality of human life (as something distinct from the instinctual nature of animals), will help the student understand the variations on this quality seen in the primitive form and the emerging, civilized form of culture. The definition of culture in the book is on pp. 1-2: "It is 'the way the members of a group of people think and believe and live, the tools they make and the way they do things.'" A general discussion of culture which is suitable for high school students is in the reading from Gene Lisitzky, Four Ways of Being Human.

To ward off value judgments by students about these two terms—primitive - civilized—it would help to introduce, first of all, the idea that all human societies have the same general kinds of activities.

As a culmination of this examination of what culture is, and in preparation for the following suggestion, it is useful for the class to establish a list of, let us call them, "cultural activities," or some such term. These will be activities in which all men engage as their way of life. This will direct the student into the details which make up "Culture" in general and will provide a framework for the next step, understanding the meaning of "primitive."

1.B. "Primitive" and "Civilized"

It will be evident that The Emergence of Civilization is clearly understood only when the word "emergence" is understood. Something emerges out of something quite different but still related: a branch from the stalk; the moth or butterfly from the cocoon; the chick from the egg. There is always a continuity between the emergent form and the previous form. It is important that the student understand that in the case of humans, the continuity is in the changing characteristics of the culture. Culture is the major thread connecting primitive and civilized societies—although the quality, style, and degree of complexity of the culture change.

This emergence of civilization—which is our main concern— was a development of utmost importance in the history of man. The problem is, a high school student may find little to get excited about because he is not really aware of the differences between the two ways of life. The differences are very great. The emergence of civilized life was a crucial transition, and if it had not taken place, the way of life of our students would probably be almost totally different from what it is. But to appreciate this requires at least some general knowledge of primitive life. The contrast exists between what is and what was because of this bundle of conditions and events which resulted in the emergence of a new form of lifeways.

It is difficult to make primitive life real for students in the short time allotted to introductory work. But a general description of it could be developed by using the previously suggested list of "cultural activities," or something similar. Also, the first two paragraphs of Chapter Two in The Emergence of Civilization will be of assistance. Beside each culture activity could be written a brief descriptive label showing how primitives carry out that activity. Then the class could add a brief description of civilized ways side by side with the primitive ways. This makes the contrast stand out more dramatically and it focuses attention on the details of culture which will become important in the text anyway. Now all of this would be done as groundwork for asking the questions that matter most in the unit:

-What are the main differences between the two ways of life?
-Since all men on earth led a primitive life until about 6,000 years ago, how is it that there is this different kind of life called "civilization" today? How did it "get started"? Under what conditions did it emerge?
-How can you tell if a society is "civilized"?

All of these are directly on the point of the book's objectives. Naturally, the student cannot answer them at this point. But that is not the purpose, anyway. We are only trying to achieve the fullest possible understanding of the goals themselves, phrased as questions, and with that, hopefully, no small amount of interest in getting answers.

2. Concerning the work of archeologists and the associated attitudes which the students will have to have in order to investigate the main questions properly, there are several points which they should be aware of by the time they have finished the chapter.

2.A.1. Relative age is important because it shows order of development. The wastebasket example would indicate types of activity carried on during the typical day and the order in which some of them took place. A good example of relative dating is given by J. W. Swain, The Ancient World, Vol. I, p. 42. A photograph shows the "step trench" which has been cut into the side of the hill called Tell Judaidah from bottom to top. Fourteen levels have been identified (based upon the expert knowledge of other areas and of absolute dates of most objects), the earliest pieces of evidence at the bottom, the latest at the top.

It is an entirely artificial mound which rose over more than 4,000 years due to gradual "melting" of clay brick structures and accumulations of rubbish, the very kind of thing used as an example in The Emergence of Civilization.

2.A.2. The relative dating will be understood fairly easily. The absolute dating will have to be explained as the result of expert knowledge of pottery styles, sculpture styles, at what time they were done, etc. The Carbon-14 method of determining absolute age of certain materials found by archeologists is another kind of information which would be useful in emphasizing that this work demands exactness and certainty if it is to bear real fruit. The Carbon-14 method is described in the reading on this subject. A student who realizes that scientific equipment is used to maintain a high level of accuracy in archeology is more likely to try to sharpen up his own thinking, too.

2.B. An illustration may help in the observation and interpretation of evidence. Ask the students to imagine that their own basement (below ground level) was all that remained of their respective homes 5,000 years from now. In that period rubble, layers of dirt, and other houses had covered it up. Perhaps an earthquake and several floods had combined to pack stones, gravel, sand and clay in and around all the items in the basement. Moisture decayed what could decay, and rust had reduced all metal to mere shadows of its original condition. (1) What would remain after 5,000 years? (2) what could the archeologist construct about the student's way of life?

2.C. Pictures are very helpful, and they become more interesting after the student has had the introductory material and thought about it. Sir Leonard Wooley's book, Digging Up the Past, is available in a paperbound Pelican edition and has some very good photographs of archeological activity. There is even an aerial photograph of a field in England showing the outlines of the Roman town of Caistor beneath the surface. The National Geographic has many good picture articles from time to time. The following are just a few which will illustrate varied archeological activities in several areas of the world.

--L. S. B. Leakey's search for earliest forms of man in Africa, Oct., 1961; Jan., 1963
--Nile treasures being flooded by Aswan dam, and treasures from King Tutenkhamen's tomb, Oct., 1963
--Story and remnants of Pompeii, Nov., 1961
--Bronze Age ship cargo brought up off Turkish coast, May, 1962

Another confrontation with the objectives comes at the end of the chapter after a description of the work of the modern, problem-oriented archeologist. The following questions are quite similar to the questions asked by the expert after he has completed his digging and identification, and has gone on to the work of interpreting, searching for regularities and comparing his results with those of others. These, too, can be brought up for discussion and observation, despite the lack of information at this early stage. The purpose is to start the students thinking about them.

--Did all six civilizations go through the same stages of development? i.e., were there laws or principles in operation which cover all cases?
--Were certain developments, such as trade, always dependent upon the appearance of some other factor first?
--If one factor, such as cities, is present, will there usually or always be a certain other one present, too, such as written communication?
--What took place in the development of each civilization? i.e., in what order, if any, do changes take place?
--What explanation can you find for the fact that civilizations arose in these particular (six) areas instead of somewhere else? (Why there at that time rather than earlier or later in the Mississippi river valley or in southern California?)
--Why don't primitive people live in large settled communities like cities?
--Why does primitive life go on pretty much the same way generation after generation?

All of these questions are related to the three main objectives of the book.

Culture—a brief, general description*

For the zoologist there is so little difference among the races of man that he is obliged to class them all in a single species—only one out of the million species that share the earth. But there is no end to the social varieties of this single species, and the differences among them can be as startling as anything to be found among the hundreds of thousands of insect species. None of these human social differences is inherited in the same way in which bodily or racial traits are. They have almost nothing to do with zoology. They are man-made, pure inventions or conventions. It is with these differences that anthropology is chiefly concerned, for it is these that make up most of what we mean by human nature.

Every animal other than man is born into the world with special "built-in" ways of handling it, called instincts. If you moved an ant egg into a beehive, you would not expect it to grow up to flit among the flowers for honey. But if you smuggled a Japanese baby into a Hopi cradleboard, you know that he would grow up a Hopi, who is a vastly different sort of human being from a Japanese, with altogether different tastes, attitudes, and beliefs.

The human baby does not have his future way of life spelled out for him by instincts. Only after he is born can he learn the customs by which his society expects him to live. But he can be taught these customs so well that in time they will seem as natural to him as it is for an ant to live as an ant and not as a bee or a grasshopper. In a way, therefore, human beings are made, not born. Man makes himself. That is why there can be so many different ways of being human.

Now all the customs—the different ways of behaving and believing—that each society teaches its members are what the anthropologist calls its "culture." A culture is an enormously complex thing, for it includes not only the society's ways of using material things, such as tools and weapons and shelter and clothing and food, but also its language, morals and manners, religion and science, economics and art, government and family relationships, and even its ways of sitting down and making love and committing suicide and whittling sticks. Cultures are what anthropology is chiefly concerned with.

In theory, the anthropologist is just as much interested in big, complicated societies like those of modern Japan or ancient Rome as he is in the small, simple cultures of the Hopis and Hottentots. But, as a matter of fact, what the science of man has most carefully studied are the tribal societies that we call "primitive" or "uncivilized," by which we mean that they have not built cities, invented writing, or discovered the use of metals.

One reason for this partiality is the desire for scientific detachment. The anthropologist knows that he is himself a member of a particular society whose subtle prejudices he may not be able altogether to avoid. He therefore prefers to study cultures as unlike his own as possible. Another reason is simply convenience. It is certainly easier for a few students to get a quick over-all view of how a whole society works if it is smaller and less complicated. Besides, the less crowded and confusing the setting, the more likely the anthropologists are to uncover any fundamental principles by which all cultures work.

Finally, these primitive cultures seem insignificant today only because we see them as tiny remnants struggling hopelessly to survive in the nooks and crannies of a world rapidly being taken over by our own more powerful civilization. But against the background of the history of mankind, they are vastly more representative of human culture than we are. What we call "civilization"—the culture of cities, of writing and metals, of advanced agriculture--is only a few thousand years old. For many hundreds of thousands of years before that, for practically its whole lifetime, mankind lived only in small wandering groups by gathering wild plants and hunting animals. Even the simple cultivation of the soil is fairly recent, by these time standards. It is we who are the exceptions in the ways of mankind. For all we know, civilization may yet turn out to be only a "flash in the pan." Primitive culture—the life of plant-gatherers, hunters, and simple cultivators—has amply proved its ability to support a human way of life indefinitely.

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*Gene Lisitzky, Four Ways of Being Human, pp. 14-16.

NEW RADIOCARBON METHOD FOR DATING THE PAST *

By Donald Collier

Curator Natural History Museum

The method of radiocarbon dating, developed by Dr. Willard F. Libby in 1948-50 at the Institute for Nuclear Studies of the University of Chicago, promises to revolutionize dating problems in archaeology. This method determines the age of things that lived during the past 40,000 years by measuring the amount of carbon 14 they contain.

Carbon 14 is an unstable (radioactive) heavy form of carbon with an atomic weight of 14. Normal, stable carbon has an atomic weight of 12. The half-life of carbon 14 is about 5,500 years. This means that an ounce of carbon 14 is reduced by decay to half an ounce in 5,500 years, that half the remainder decays during the next 5,500 years, leaving a quarter of an ounce, and so on.

Carbon 14 is constantly being formed in the earth's upper atmosphere as the result of the bombardment of nitrogen-14 atoms by cosmic rays (neutrons). The carbon-14 atoms thus created combine with oxygen to form carbon dioxide, which becomes mixed in the earth's atmosphere with the vastly greater proportion of carbon dioxide containing ordinary carbon atoms. The carbon 14 then enters all living things, which, through the life process, are in exchange with the atmosphere. This exchange is carried out through photosynthesis in plants. Dr. Libby has shown experimentally that all living matter contains a constant proportion of carbon 14, which is about one trillionth of a gram of carbon 14 to each gram of carbon 12. This constant proportion results from the equilibrium between the rate of formation of carbon 14 and the rate of disintegration of the carbon 14 contained in the atmosphere, in the ocean, and in all living things.

When a plant or an animal dies, it ceases to be in exchange with the atmosphere and hence there is no further intake of carbon 14. But the carbon 14 contained at death goes on disintegrating at a constant rate, so that the amount of carbon 14 remaining is proportional to the time elapsed since death. Given the carbon-14 content of contemporary living matter and the disintegration rate of carbon 14 (the half-life), it is possible to calculate the age of an ancient organic sample from the amount of carbon 14 it contains.

SAMPLES ARE BURNED

The laboratory procedure consists of burning the sample to be dated, reducing it to pure carbon, and measuring its radioactivity (rate of atomic disintegration) in a specially constructed, extremely sensitive radiation counter (a form of Geiger counter) in order to calculate the proportion of carbon 14 it contains. The measurement is expressed in terms of the number of carbon-14 disintegrations per minute per gram of carbon. This value is 15.3 for contemporary living samples, 7.65 for samples 5,568 years old, and 3.83 for samples 11,136 years old. Very old samples contain such a small amount of carbon 14 that the error in counting becomes very large, so that the effective range of the method with present techniques is about 40,000 years. At present the year error in dating samples ranges from 2 to 10 per cent, depending on age, the size of the sample, and the length of time it is measured.

Although carbon 14 is present in all organic matter, certain kinds of material have been found to be most useful for dating. These are plant material and wood, charcoal, shell, antler, burned bone, dung, and peat. Unburned bone appears to be unreliable because it is more easily altered chemically than these other materials and hence may lose or gain carbon-14 atoms by exchange during the time between death of the animal and the present.

*Taken, with minor adaptations, from Chicago Natural History Museum Bulletin January 1951.

Handbook: Chapter 1

Approximate daily schedule

	In Class	Homework
		pp. 1-2
Day 1	Explain and define culture	Make list of "culture activities"
Day 2	Establish single class list of "culture activities"	Fill in "primitive" and "civilized" ways on chart
Day 3	Establish complete chart in class and discuss questions in 1b of handbook. Discuss meaning of "emergence".	pp. 2-4
Days 4-5 or 4-6	Explain relative and absolute age; get acquainted with archeological work.	pp. 4-6
	Discuss for understanding the questions on p. 6 in handbook.	p. 6-7

Total 5-6 periods

Chapter 2

Introduction

This chapter will help the student understand the sequence or order of events in the emergence of civilization. The emphasis here is on the prelude, the setting of the stage. Although the agricultural revolution was experienced in many areas which did not eventually emerge as civilizations, this critical advance in man's technical control of his food supply is exhibited as the beginning point for the later changes which would result in civilization. Thus, the agricultural revolution should take on importance for what it made possible later.

This chapter also can contribute to the understanding of the question: "What were the physical and human characteristics in each of the six centers which help to explain why civilization emerged in those particular places in the world?" After a study of Chapter Two, the student should see great significance in the facts that certain kinds of grain grew wild where they did and that certain people were receptive to the possibilities suggested by the presence of this grain. In other words, once the Agricultural Revolution becomes important to the student because of the groundwork it laid for civilization, the physical and human characteristics that made that revolution possible also will take on new meaning for him.

It is important for the student to note, however, that the physical and human characteristics that made the Agricultural Revolution possible, are not all that were present in the emergence of civilization itself. For as the author points out, the transition to agriculture and animal domestication did not always lead to civilized life. The student must continue to look for more characteristics in the chapters ahead.

1. This chapter begins with a description of how men lived for thousands of years. The five specific characteristics of primitive life: food gathering, isolation, family groups, homogeneous activity, and nomadism, all will disappear as civilization emerges in later chapters. If the student understands these, along with the other characteristics discussed in Chapter 1 of the handbook, he will have them to use in his later analysis of what happened as civilization emerged. Following is a suggestion:

1.A. Construct a three column chart, the column at the extreme left being "Characteristics of primitive life." In the next right column, entitled "description" the students would describe briefly in their own words what is meant by "isolation," "food gathering," etc.

1.B. At this point, some interesting questions can be presented to the class:

- Why don't primitive groups live closer together?
- What reasons can you think of that explain why a mother, father, two sons, and a daughter, living in one group, don't decide to move into another group 25 or 30 miles away?
- In a primitive tribe, why don't some men usually make tools full time, or build huts, etc., instead of each man doing all the various types of work necessary in such a way of life?
- Why are most primitive people nomadic? Why don't they live in one place as we do?

Explanation of these will fall back on the food-getting facts of life.

1.C. After the transition to basic agriculture has been discussed, you could then return to the chart and the third column, headed "How agriculture could change primitive life." Here, during class discussion, the students could become further involved in the transitions that are taking place.

2. Main points about the Agricultural Revolution:

a. Purposeful cultivation of wild plants and wild but docile hard-type animals grew out of food-gathering activities.

b. Very gradual change in the proportion of domesticated food to wild food.

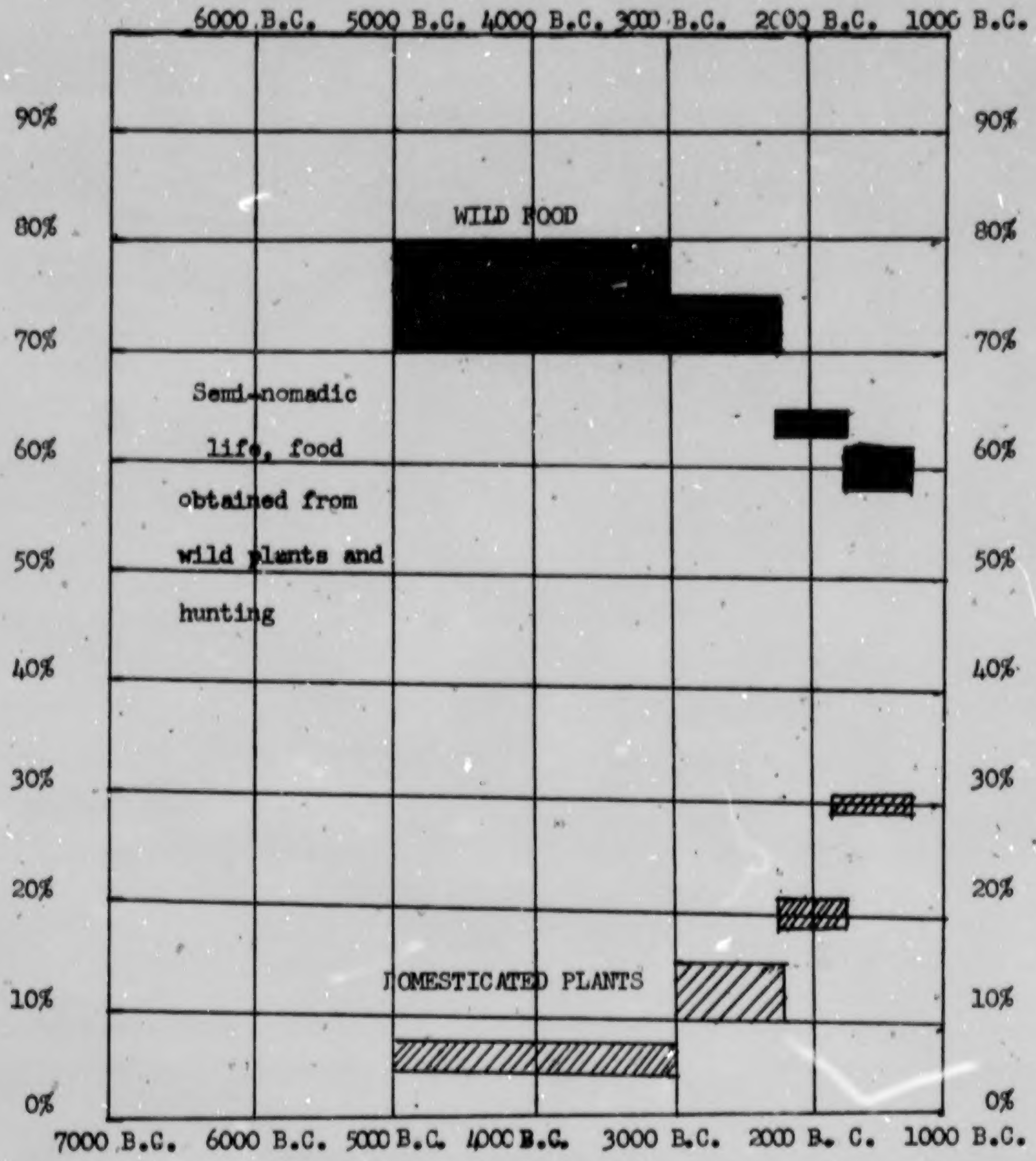
c. A more reliable supply of food allowed more people to live in an area.

d. Many areas in southwest Asia had experienced the Agricultural Revolution between 9000 and 6000 B.C.

3. Students can make a chart to get firmly in mind the gradualness of this revolution:

Diet of Tamaulipas Indians, Mexico,

showing percentage of food from wild and domesticated plants,
7000 B.C. - 1400 B.C.



Primitive Characteristics	Description and/or definition	How characteristics could change due to larger, surer food supply, i.e., effects
Food gathering		
Family groups		
Homogeneous Activity		
Nomadism		
~~Education~~ Isolation		

The Transition to Agriculture

Although you cannot always count on it, there is a very good possibility that students will ask, "How did anyone 'discover' agriculture?" Students are almost certain to make the "discovery" assumption instead of looking at it as a gradual change-over, as illustrated in the material about the Tamaulipas Indians. That example, and the suggested chart for study purposes, should make gradualness understandable to them.

But something can be done with the question of what took place after the development of agriculture. Perhaps it never will be really understood how agriculture first was practiced. Undoubtedly it grew out of harvesting of wild plants, but just how and why that first seed was sown we may never know. However, we do have testimony from anthropologists about the agriculture of primitive tribes...who have gone no further. The examples below may help to dispel the idea that agriculture itself was a magic key to the golden door of civilized culture. Even irrigation as carried out by the Sahara peoples has not by itself launched a series of dramatic social events that resulted in revolutionary changes.

You may wish to read these cases to the students after a discussion of the last two or three paragraphs of Chapter Two, particularly the last paragraph beginning -- "For reasons that are only partially clear..."

In short, these examples may help you take the emphasis off the question of how agriculture was discovered and put it where it belongs: Why did civilization itself emerge in only six particular places and in what way? The following brief examples do not lessen the difficulty which the student might feel; they merely direct the frustration to the real point.

THE MOARIS OF NEW ZEALAND (From Kaj Birket-Smith, Primitive Man and His Ways (New York: Mentor Book, 1963), pp. 205-209.)

The second wave of the Maori immigration to New Zealand, in the 1300's, it is believed, brought cultivated plants to add to the already established methods of food-gathering. These included hunting birds and rats, fishing, and gathering mussels. The taro and the sweet potato were the crops cultivated by the Maoris, accompanied--particularly at planting and harvest times--with much ritual and taboo. The Maori knew that the taro grows best in humid places and that light soil is best for both plants. They added gravel to lighten heavy soil. Crops were planted for three years, the field lying fallow the fourth. They cleared their fields on slopes facing the sun, and Birket-Smith notes that on South Island windbreak fences were erected. All land belonged to the tribe and was distributed to kinship groups, which in turn divided their areas among the families. The men cleared trees away for new fields in later autumn or winter so they could be dry when the spring grass- and brush-burning took place. The men also planted and harvested and the women did the cultivating and weeding. Tools consisted of the adze for clearing, a hardwood spade, a digging stick with foot support, and a shorthandled wooden hoe.

THE PLAINS INDIANS (From Birket-Smith, pp. 71-76.)

The Plains Indians in the lower, eastern region and the Missouri River Valley began cultivating **various crops** thus combining farming with food-gathering, and altered their pattern of living at the same time to fit their new life. Farming was done in the river valleys where the soil was easier to work with their simple tools. A hoe made from a bison's shoulder blade. The crops were maize, beans, gourds, and sunflower seeds. Maize was the big crop, which was called "mother" by the Omahas. Tobacco also was grown, but this was a sacred plant and was grown for ceremonial purposes not only by the eastern tribes but by their cousins, the purely hunting peoples of the higher plains farther west. Fertilizing was unknown, so that new plots of land had to be cleared regularly. During the period of sowing and harvesting, the tribes lived in villages on inaccessible cliffs surrounded by stockades some distance from the fields. During the summer, after crops had been planted, the tribes packed for the annual great bison hunt. For this they lived in tents out on the plains. Following the hunt, they returned to their fields and villages to harvest the crop.

SAHARA NEGROS OF ALGERIA (From Birket-Smith, p. 147)

These central Sahara people grow their crops in oases such as the mountain area of Ahaggar and the table land of Ajjer. The main grain is guinea corn, a kind of millet. Other foods are dates, figs, and vegetables. The farmers are sharecroppers, paying, these days, about one-half to two-thirds of the harvest to the landowner. Simple digging sticks and sickles are used. The irrigation system, which of course is essential, in some places is a long distance affair. Water is obtained from higher land levels and brought to the farm areas by underground pipes which empty into channels in the ground. The water then is drawn to the fields by ditches from these channels. In other areas, wells are used.

NOMADS OF THE SUDAN (From Henri Frankfort, The Birth of Civilization in the Near East [Doubleday Anchor Book], p. 33.)

Frankfort cites these people's practices as evidence that the earliest farming in the Nile valley and Mesopotamia could have been carried on without purposeful irrigation systems. These people are the Hadendoa, a Hamitic-speaking group related linguistically to the pre-Arabic inhabitants of North Africa and the central Sahara: mainly Tauregs and Berbers. The Blue Nile, flooding during later June, covers portions of their land with water from two to three feet deep. Usually, rains come in brief but heavy and frequent downpours at the same time as the river flood and also lasting for some weeks afterwards. The subsiding water leaves a thick layer of mud over the land. At this time the Hadendoa people sow their durra, a sorghum plant which yields grain. There is no cultivating beforehand and no regular field arrangement. They make a hole with a stick, pour in a handful of seed, and wait for it to sprout, ripen, and bear grain. The harvest is usually enough for their needs, but Burckhardt adds that if the inundation is skimpy one year, they suffer for it. When the harvest is in, they go back to their occupation of herding.

THE ABABDEH OF EGYPT (From Frankfort, p. 34)

Frankfort quotes Percey E. Newberry, writing in 1924, on the possibilities of using water for a quick crop even when no river flooding can be counted upon. The Ababdeh, a Hamitic-speaking people living between the Nile and the Red Sea, "sow a little barley or millet after a rainstorm, and then pitch their tents for a while till the grain grows, ripens and can be gathered. Then they move on again with their little flocks." It is possible, then, according to Henri Frankfort, that agriculture could be carried on even without regularly occurring floods, and without systematic irrigation. Perhaps similar situations existed in earliest farming times in the Nile and Mesopotamian areas.

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These cases may help the student to understand and "feel" how the revolution took place. All of these peoples are considered "primitive," yet they grow crops. Therefore, such questions as these may well come up: Apparently the "discovery" of agriculture does not lead inevitably to civilized life. Why not? If agriculture does not automatically mean eventual settled, civilized life, what else must be present or take place for civilization to emerge?

Handbook: Chapter 2

Approximate daily schedule

	In Class	Homework
		pp. 9-10
Day 1	Explain first column of chart described on p. 2	Brief descriptions of each primitive activity (second column, chart)
Day 2	Check descriptions and establish single set for class	pp. 10-11
Day 3	Discuss reading, give examples of primitive peoples who grew crops	pp. 11-13
Day 4	Do Tamaulipas chart in class. Make four main points about Agricultural Revolution.	Do third column of chart
Day 5	Check 3rd column of chart. Reconsider questions on p. r of Chapter 1.	Read the first Case Study of the emergence, pages 15-19. Look for evidence of transition from primitive to civilized form of culture.

CHAPTER 3

CASE STUDY: MESOPOTAMIA

1. Introduction

The emergence of civilization in Mesopotamia has special interest for a variety of reasons: the people of this area were the first to apply the ideas and techniques of the Agricultural Revolution; the stages in the emergence of civilization are more apparent here than anywhere else; we find, here, the earliest examples of writing and of cities. Finally, the physical evidence of settlement of this civilization has been completely buried: no noble ruins dot the landscape as they do in Rome, Athens and Egypt.

For the high school student these may not seem to be facts of special interest. His world history course is probably compulsory. He has not willingly chosen to study the past. But he is interested in origins -- the first automobile, as well as the latest model; the first airplane as well as the newest -- the first cities may hold as much excitement for him as the one he now lives in or visits during the summer. A World's Fair in New York is believable; a world's fair in a thatched roof village is more difficult to imagine. And it is a theme of this book, but not the thesis, that cities and civilization are usually coexistent. Since our hypothetical student is not only interested in origins but also in values, he may be intrigued by trying to find out how urban civilization grew, how early civilized men lived and what they lived for. The archaeological record is lean and sparse. It will appeal to the Sherlock Holmes in your class who values evidence for its own sake, who may appreciate the past simply because it reveals the past. Others will need constant analogies with the present and with things they can understand if the search for an understanding of the process of emergence is to be meaningful to them. It is the purpose of this handbook to help the teacher with both types of student.

The consequences of the peculiar aspects of Mesopotamian civilization are many: Mesopotamia has taken Egypt's place as the earliest civilization -- but we should not infer from this, as was often the case with Egypt, that because it was the first it was also the "cradle" of all later civilizations -- indeed, it is another aim of this book to show that all later civilizations were not a result either of the diffusion of ideas or of people from any one source. The presence of writing is helpful in two ways. As history, it supplements the findings of the archaeologist; but writing also makes it possible for us to draw more plausible inferences about the social and economic and religious life of a culture in the centuries prior to the development of writing. The dry, hot climate of Mesopotamia has favored the archaeologist. The ruins of past villages, towns and cities, although buried, are well-preserved and we can trace the origins of the walled city of 50,000 inhabitants back to the walled town of 4,000 back to the hilltop village of 150. We cannot know of their religious beliefs before the advent of writing but we can see the evolution of architecture, principally temples, from insignificant structures 10' x 10' in 4600 B.C. to imposing buildings comparable in magnificence (but not in function) to the pyramids of Egypt or the cathedrals of the Middle Ages. Because the climate of Mesopotamia seems to us to be a hostile one, the teacher or the student may ask why men chose to live there and what effect, if any, the climate had upon the organization of their society and on their beliefs. To what extent was it necessary to work together in order to survive? What happened to family, clan and tribal values when people began to live in such an entirely different environment?

2. Emergence of Civilization in Mesopotamia

The chapter is divided into two parts. The first half (pages ~~1-13~~ 15-21) is concerned with the physical evidence showing cultural evolution from 6750 B.C. to 2400 B.C. through four stages: 1) the establishment of village farm communities in four places throughout the Fertile Crescent but not in the river valleys themselves; 2) the development of village farm communities of increased size in the valley, or more specifically, the Euphrates delta; 3) the rise of small cities in the valley together with many important innovations -- the ziggurat, the plow, the use of draft animals, and especially writing; 4) a composite picture of urban life based upon evidence drawn from three major cities -- Uruk, Lagash and Nippur. The second half (pages ~~14-25~~ 21-27) briefly considers some specific aspects of Sumerian civilization -- the earliest of many Mesopotamian civilizations -- chiefly their economy, the steps in the development of their wedge-shaped or "cuneiform" writing, mathematics, the form of government, and finally, their religion and "world-view." The greatest difficulty the teacher will face will be the continual balancing of past and present, the need to give examples but to avoid a bull-session type discussion on modern civilization; the danger in allowing the mass of archaeological data to drown the search for basic questions.

2.A. The first half of the chapter is best suited for tracing the development or origins of civilization in Mesopotamia from 6750 B.C.

to 2400 B.C. There is a huge amount of information here -- relative to the other emergent civilizations -- what does it tell us? Sociologists and archaeologists talk about "data," and crime reporters and police detectives use the word "clue." In this case no crime has been committed but something momentous has taken place. We can't understand what's happened until we arrange the clues or data in some meaningful way. Since the students are in quest of the origins or stages in the emergence of civilization they ought to review the characteristics of civilization presented in Chapter I. Once they have done this they can examine the clues in either of two ways. They can use their definition of civilization and subdivide the idea into all of its parts in the same way that one takes apart an automobile to see how it runs or explains why the Yankees have won the pennant by comparing their batting, pitching and fielding averages against those of their opposition. The list of parts or categories of a civilization which the students find may approximate the ideas represented by Childe's ten criteria for the emergence of civilization in Mesopotamia. Once the students have established what are the parts they can then look at the material in the first half of the chapter and see if they can find clues or data which, after the passage of many years, might form a part of a civilization. Or, students might simply be asked to read the first half of the chapter for homework one night and be prepared to give their interpretation of the evidence the next day in class. What does the evidence show us about the emergence? What facts are of apparently crucial importance? What facts (or clues) are less important? Does the evidence give us a complete picture? To those students who are usually freer than the rest of their classmates in criticizing the reading material, or to those who cannot find the answer to the homework question in one sentence written by the author, the teacher might say: "You are quite right. The author doesn't tell us the answer but he does give us clues which we can use to establish some kind of explanation. The text itself provides some clues."

2.A.1. The first section talks about a "different way of life." Where? How was it different from the previous way of life? How was it similar to the previous way?

2.A.2. The second section (the problems and potentialities of the river valley) deals with life in a different place. How was life in the valley different from life in the grasslands on the edge of the river basin? What were the advantages and disadvantages of river valley life? What clues can be found in this section which show men moving towards a very different kind of life? The teacher may point out that the society which the class is talking about were not striving for civilization. They were not making a series of logical choices which lead them to civilization. They had no idea about how they wanted their great grandchildren to be living in a clean, well-lighted place 60 or 70 seasons in the future. They were, rather, coping with their immediate problems and the possible solutions to them.

2.A.3. The third section of the first half of the chapter has a peculiar name. It may seem to some students that the author and the archaeologists are involved in a conspiracy using bizarre names to make it hard for the detectives to sort out the evidence. Why is this historical period called "Ubaid"? What are the chief characteristics of the period? The teacher might need to help the students observe that the term "Ubaid" is applied in four different ways: it is the name of a Sumerian city, the name of a strata at the neighboring site of Eridu, the name of a distinctive pottery style, and, largely because of this third factor, the name given to an historical period characterized by the widespread use of this style of pottery. What further evidence do we see of change? What evidence do we see of continuity with the past? What clues are there which indicate a further emergence of civilization?

2.A.4. The fourth section of the first half of the chapter (Proto-Literate P.:3400-3000 B.C.) represents another cluster of evidence. The same kinds of questions which were asked before can be repeated here: what facts are presented? Which clues are relevant to the emergence of civilization? How does the use of the plow and draft animals affect man's food producing capacity? Would the one be of use without the other? Assuming that the soil was very fertile and the water supply was abundant how much land could one man cultivate with an oven-baked clay hoe? How much more efficient might he be with a stone or metal hoe? On the other hand, if a metal hoe is so superior a tool, how would the student explain the soulless, barren quality of peasant life in Millet's painting of "The Man With the Hoe," or in the bitterness of Markham's poem:

> Bowed by the weight of centuries he leans
> Upon his hoe and gazes on the ground,
> The emptiness of ages in his face,
> And on his back the burden of the world.

What clues does the author rely upon which permit him to state that there was "evidence of urbanization"? Will someone contend that a population of 1,500 is sufficient for that of a city? Who provided the 1,500 construction workers with their bread and water and clothing? Were they married? Did they have children? Does the author say? Where can we go if we want to find more information? The teacher might note here the possible richness which a footnote provides for that Baker Street Irregular who wants to seek further information.

If the teacher wishes, the class may explore the implications and consequences -- both social and political -- of the impact of irrigation upon the economy of a small riverbank village. In 1964 two international controversies involved disputes arising out of irrigation projects: the diversion of large quantities of water from the Colorado River for irrigation purposes in the United States increased the content of the water which made it unsatisfactory for irrigation purposes in Mexico; a second case has involved the plan by Israel to divert the waters of the Jordan River for use in Israel while neighboring Jordan threatens war if the plan is actually carried out. On a smaller scale, students might be interested in role-playing where everyone represents a head-of-household and they have all met to draw up a plan for an irrigation project involving all of their families. They will have to know when the river is expected to flood and when its flow will return to normal, when to plant their crops and what crops to plant, which families will have the land nearest the river and which the land farther away, who will dig the irrigation ditches, how large they will be and who will maintain them, who is to supervise so that no one family or group of families receives more than their allotted portion of water, etc., etc. In simply going through the barganing process students may begin to see some of the problems more vividly and one solution is that someone be given the authority to superintend the entire process.

What does the widespread use of copper tools and utensils in southern Mesopotamia indicate about the prosperity of their culture at this time? Some students may be interested in locating the principal sources of copper, tin, gold and silver throughout the Mediterranean world and Southwest Asia prior to 1000 B.C., while others might make the attempt in their shop or art classes to learn about early methods of refining tin and copper and the making of bronze or copper tools and utensils. A member of the staff of a local museum could be asked to come to class to discuss and illustrate with examples the metal tool traditions. Even if the lecture-demonstration does not pretend to cover the precise methods used in early Mesopotamian history the students will have gained much: an understanding that the process is difficult, requiring a high degree of intelligence as well as manual skills, and that the individual or individuals who were sufficiently competent to do this kind of labor could have an honored place in society by exchanging their manufactured goods for the necessities of life.

In the same way students might obtain a better comprehension of the skill and patience involved in such a simple thing as a "cylinder seal" if they could first see a picture of one and its impression on clay and then attempt to copy the same form in a soap or wood sculpture. (See Mesopotamia Slides #6 and #7)

A discussion of the cause and consequences of writing -- mentioned in the final sentence of the section -- could be put off until the section dealing with the evolution of writing in the second half of the chapter was read.

2.A.5. The description of three cities -- Lagash, Nippur, and Uruk -- may strike many students as anti-climactic. If this is civilization, they might comment, we don't recognize it. And this is a reasonable comment because Sumerian life was different from our own variety and it would be misleading to try to make the student think it is like ours. This might be a profitable time to compare the evidence again: Jarmo, Hassuna, Siyalk, and Jericho as seen against the development represented by Lagash, Nippur, and Uruk might show some startling differences. The Want Ads column of an imaginary Lagash or Uruk newspaper might include the following items:

Small farm, 2 acres, close to central irrigation canal;
Town house, the former property of a traitorous gentleman;
Chariot, slightly used, wheels in good condition;
Bronze water jar, capacity one gallon;
800 hand-made bricks, finest clay in Sumer.
To Rent: three rooms on the second floor; one wool carpet, 6' x 3', made in Uruk.

Aside from the fact that there would have been no newspaper in the four earlier villages because there was no writing at that time, what other important changes or differences can the students see between the two eras? Compare the early Sumerian cities with our own. Does the urban environment which they represent seem to be closer in mood and style to their predecessors in the foothills of the Tigris-Euphrates or closer to our own culture? Does the manner of living which these cities reflect approximate the class' previously agreed definition of civilization?

2.B. The second half of the chapter deals with the nature of some aspects of Sumerian civilization itself. The students should seek to increase their understanding of the statement in Chapter I that civilization involves a "new and qualitatively different way of life." Throughout this half comparisons can be made with earlier Mesopotamian cultures and with the students' contemporary culture in order to show changes as well as continuity. By the end of the reading and the discussion on this section students ought to have a clear idea of some of the essential characteristics of Sumerian civilization (its "uniqueness" or "personality") so that they will be prepared, at the end of their study of the emergence of civilization, to establish some kinds of generalizations in answer to the question: "What is civilization"? — basing their answer upon evidence gathered in three, detailed case studies of emergent civilizations. Within this broad framework, each section in the second half of the chapter may be used to illustrate specific aspects or contributions of Sumerian civilization: almost all urban residents in Sumerian cities owned or farmed land outside the city's walls; their discovery of writing led to the formation of a highly stratified society with increased power to those who were literate; the city-state was both dominated by and a reflection of its citizens' religious faith.

2.B.1. One important aspect of civilization is evident in the first section (Economy: the Manorial System)—namely the existence of private property and its corrollary, the inequality of wealth in a civilized society. Some eventually acquired control over other men. How did this come about? Is it in the nature of things that some men lead and others follow? Does Plato's division of humanity into men of gold, brass, and clay have any rational support? Students may note in the text that leadership of the city-states varied — in some instances a priest became the dominant figure and in others a legal

"King" or great man. How did this difference come about? A possible answer would be that the King owed his leading position to his popularity as a military leader in the same way that Jackson, Grant and Eisenhower drew upon the military reputations to enhance their political careers. The priest-leader may have been an early prototype of Ghandi - a man who captured the support of the mass of ordinary men through a subtle combination of personal piety and political realism. Such a discussion might lead on to a brief consideration of the role of the great man in history. Is history principally the record of the achievements of great individuals? The question is not purely academic and will occur again when the student reads of the emergence in Peru, the Indus Valley, and China. While some basic questions about the use and ownership of land are still not clear the students can be asked to compare the duties or responsibilities which went along with political and economic power. Apparently there were no important differences between the responsibilities of the Ingal and the Ensi. The leaders of the city-state were expected to perform a great variety of services: provide charity to the needy, retain a surplus of food for bad seasons, offer appropriate thanksgiving sacrifices to the Gods of the city, maintain the security of the state against foreign invaders as well as floods, arbitrate differences arising out of disputes concerning the use of irrigation water.

The economy which made possible all these services may well appear to the student to be more complex than our own. Why was there such a bewildering variety of methods of land ownership? The best answer seems to be the simplest one: it was a time of change from village-farms and small towns to cities. Old forms of ownership persisted while new ones developed simultaneously.

The economic base of Sumerian civilization remained an efficient agricultural system. The student might compare this situation with what he thinks is the basis for civilization in the United States today. Perhaps some will recognize that our own society's prosperity and civilization -- for the two things are closely related -- are based upon an abundance of natural resources -- mineral as well as agricultural -- as well as a highly efficient banking system and a stable government. If students can perceive that the economic institutions will have an effect upon the "personality" of a civilization perhaps they can begin to see that the term "civilization" -- although we speak of it as though it was composed of only a certain number of specific ingredients -- is in fact a way of living which has as much variety of form as do simpler cultures.

Before going further students might make a list of similarities between Sumerian economic activity and our own. The list might include some of the following items:

government storage of surplus food (for different reasons)
government disbursement of surplus food to the needy in time of stress
government and private trading -- a "mixed" economy
large scale public work directed by the government

Students could then be asked to read the final section of the chapter with one question especially in mind: what aspects of Sumerian city-state life are most different from American urban life? Three differences ought to be noted, at least one of which could be stated before reading the section, namely, the fact that we are the heirs of the Industrial Revolution as well as the Agricultural Revolution, that factories dominate our cities and the American urban resident of 1964 is far more divorced from the land than was his counterpart in Ur or Lagash in 2400 B.C. But aside from this economic difference, there is a political and a spiritual difference:

1) the American city is part of a larger political body — a nation state — which in our case includes about half of the entire continent of North America; 2) the complete separation of secular and religious life in American urban life, and in comparison to Sumerian cities, the relatively minor role of religion itself as an active force in the life of the city. Perhaps the most striking difference between the Sumerian city and the modern city appears in this area of religion and world-view:

> Dominating the city and the fertile fields, vineyards, orchards, and pastures that surrounded it rose the temple of the chief deity, usually placed upon a high artificial mound....They have been compared with the pyramids of Egypt, but they were of course not tombs. They served quite a different purpose. Each of these structures was in effect an artificial mountain raised by gigantic efforts of the community to bridge the gap between man and god. A temple was placed at the top of the tower to serve as a chamber of welcome for the god descending from heaven. At the ground level another shrine was usually provided for the accomodation of the deity during his stay on earth....We might be tempted to compare this temple complex with a cathedral, or perhaps a great monastery; but these would be false analogies. In fact there is no modern equivalent. For the god or goddess of the city was the core of its existence; *the activity of the community was primarily devoted to the interests of the temple*. Religion was not something which could be separated from daily life. Even the use of the word *religion* to describe Sumerian belief conveys the wrong impression, because today we stress religion's association with a system of ethics and morality. In ancient Sumer, as in other early societies, the concept of religion included more immediate and practical meanings as well.*

**The Horizon Book of Lost Worlds*, 1962, page 129.

2.B.2. Students could be asked to explain why religion played such a large role in Sumerian civilization. At this point the teacher could ask the class to review the basis of the city's economy -- an agricultural base -- and ask if this might be the cause for such piety and reverence toward the gods who controlled the winds and the rains and the rivers of Mesopotamia.

After these topics have been discussed the teacher could then consider perhaps the most notable achievements of the Sumerians -- their invention of writing. Several questions about writing can be asked:

1. Why was writing invented?
2. Through what stages did writing itself develop?
3. What impact did it have upon man's society?
4. Can there be civilization without writing?

2.B.3. The invention of writing is a fascinating and complex story. The earliest evidence of it indicates religious and economic uses for the first symbols -- lists of kings as well as details of commercial transactions and of commodities delivered from or supplied to the temple. The text summarizes the changes in Sumerian writing from early pictograms to the later cuneiform script. Although this description may suffice for most students, some may be interested in more detailed discussion.

To discover the impact of writing upon man's society the class could be asked to imagine a society without writing. Would the children attend school? What would be this imaginary society's equivalent to the public library? What purposes do the public school and the public library fill in our culture? If these questions are too abstract or too removed from the students' knowledge and personal experience, the teacher might try a different approach:

High school students may know someone personally who has dropped out of high school. Why is the "drop-out" at a disadvantage in competition with his friends for a job? But at least the drop-out is literate; what kind of disadvantage does the boy or girl who is illiterate face in a literate society? Students could be asked to make a list showing what they think are the chief differences between a culture which is literate and one which is not. The final list might look something like this:

Literate	Pre-literate
1. Books valued in themselves, as beautiful objects or as sources of important information or as status symbols--Pres. Eliot's Five Foot Shelf of Books, 100 Great Books of the Western World, The Book of the Month Club, etc.	1. Emphasis upon oral tradition, the story teller--raconteur--from Uncle Remus to Homer.
2. Supremacy of science and mathematics to explain natural phenomena in rational terms.	2. The supremacy of myths and fables used to explain those phenomena which are otherwise unintelligible.
3. Transmission of education thru institutions-schools, universities, public and private foundations.	3. Education transmitted through the family.
4. Accumulation of knowledge from generation to generation but also the spread of this knowledge across cultural boundaries through translation and commercial relations.	4. Accumulation of knowledge from generation to generation but limited in geographical and cultural extent by language barriers.
5. Emphasis upon the written word in legal and commercial relationships and the distinction between what's legal and what's ethical.	5. Emphasis upon one's word as a sacred trust.

The revolution involved in the discovery of writing may then be seen to have as great an effect as the Agricultural Revolution itself. With domestication of plants and animals man gained a surer food supply and with this longer life, greater security, a more abundant population, and eventually, greater leisure; with the advent of writing man was able to store ideas as well as grain for future use.

Students might also read on Sumerican mathematics. The text summarizes these achievements but does not consider their significance and for this reason might prove confusing to the student because he often fails to see any connection between mathematics and real life. But the teacher might overcome this difficulty by comparing math to writing or any other invention by noting that they are all tools fashioned by men to help him: writing helps men to remember what was said last week and what was tought today; the internal combustion engine moves the automobile and provides man with comparatively **luxurious transportation.** In what ways is mathematics a useful tool? Why would it be an advantage to the temple-priest or city-king to know the exact extent or area of land tilled by the various individuals in the city or on the estate? It could be used as a basis for taxation or as a basis for estimating the amount of grain which might be harvested. If the leaders could measure accurately the amount of grain stored in one bin they could compute how long it might last in time of drought or flood and upon this basis decide how large a ration could be allotted to each family. But perhaps the most significant thing about the invention of writing is not that it provided men with a surer means of weighing and measuring but that it involved an entirely new conception of life--a forward looking, planning ahead type of society rather than a backward-looking, day-to-day and no thought for next year type of society. Mathematics do not cause this new attitude but the careful calculation and planning that they involve are part of the civilized man's "world view."

The list drawn up to illustrate some of the chief differences between a literate and a pre-literate culture may also serve as a starting point for a discussion of the necessity of writing if a culture is to be regarded as civilized. To what extent do the invention of writing and the use of mathematics help promote an entirely new and "qualitatively different way of life" known as civilization? Does it put greater emphasis upon man's use of his mind and those who have superior minds? Surely the egg-head, brain-truster or the intellectual exists in a preliterate society but does he flourish, or influence government? Aside from the matter of individuals, can civilization really be said to exist if there is no reliable method of accumulating information about the planet on which man resides and the universe of which he is a part? And if we look at this question long enough, perhaps students can see that "civilization" is not like the goal-line on a football field — something which our side has reached or crossed and therefore something to shout about. Perhaps it is simply another stage or level in man's continuing evolution, and other stages lie ahead. We cannot label our present situation any more purposefully than the Sumerians could recognize their situation as civilized.

Handbook: Chapter 3

Approximate daily schedule

Day 1

Discussion of pages 15-19 in book. Seek evidence for transition from primitive to civilized way of life. How was village-farm life different from nomadic life? How was village farm life in the river valley different from life in the hill country? What were the advantages and disadvantages of river-valley life to the people of that time? At Ubaid, what evidence is there of continuity and change?

Day 2

Discussion of pages 19-21 (Proto-Literate and Early Dynastic section). Main problem: further evidence for transition towards civilized form of culture. Questions: How does use of plow and draft animals affect food production? How can technology, in general, help men? What are the limitations of technological improvements?

Day 3

Discussion of irrigation and the problems it creates. Each student to imitate the action of a farmer who is dependent upon irrigation if his farm is to thrive. How will they cope as individuals and as a group with the threat of flooding? How will they provide for the equitable distribution of water? The construction and maintainence of dikes and canals? The arbitration of disputes?

Day 4

Students to read section of Sumerian economy (pages 21-22) but discussion to revolve around author's statement in Proto Literate section that "we are confronted with evidence of urbanization..." Discuss meaning of this statement and related questions: What is a city? Are there different kinds of cities? How does city life compare with nomadic life? How does Sumerian city life compare with our own?

Day 5

Students read remainder of chapter for homework (pages 22-27) and see slides of Mesopotamian sites and artifacts in class. The reading and the slides may be considered as a necessary prelude to the students' efforts to construct a chart illustrating the emergence of civilization in Mesopotamia. The reading provides more detailed information about Sumerian civilization and the slides enable the student to form a more accurate mental picture of some of the various sites and artifacts found in Mesopotamia. Aside from this intellectual advantage, the slides may create some emotional bond between the student and these remnants of an ancient people. (If possible, the slides illustrating archeological methods could also be shown at this time.)

Days 6-7

Construction of chart which helps students to trace emergence of civilisation from primitive culture. Limitations and advantages of chart explained. Classroom search for catagories of information or clues by which everyone can observe the change from primitive to civilised culture through various stages or levels.

Day 8

Students reread section on the developments of writing and mathematics (pages 22-24) and in class discuss the origins, purpose and effects of writing.

Day 9

Students reread final section of chapter on Sumerian religion and world-view (pages 26-27) and compare with our own views in these matters. Teachers could use comments by deTocqueville or some other commentator upon American life-ways as basis for comparison or have class compose a statement which they think is summary of our attitude and then compare this with Sumerians views.

Chapter 4

Introduction

Chronologically, Peru was the last of the six original civilizations. It is presented for study immediately after Mesopotamia for these reasons:

- --most archeologists feel quite sure that civilization emerged independently in Peru
- --the absence of writing suggests interesting questions and variation in study
- --points of similarity between Mesopotamia and Peru are significant for comparison.

Students, having finished their study of the emergence of civilization in Mesopotamia, may come to the study of the emergence in Peru with disadvantages as well as with the advantage of some experience. There may be the feeling that, having studied the development of civilization at one site, it is not useful to study the same phenomenon at other sites. They have completed Mesopotamia, and although it was interesting, they may not be overly enthusiastic. The teacher might simply say: "Why do you suppose we are asked to continue in this book, to study the emergence of another civilization?" Students will probably arrive quickly at some statement suggesting that they might want to find out if both civilizations emerged in the same way. If they can arrive at or finally be helped to such a statement, the steps which follow it will be relatively easy and will facilitate their study because they will have identified their main tasks.

The statement or question which the students do finally formulate should, as suggested above, imply the objectives of this book. If students understand that they are trying to find out whether and in what ways the civilization differed from another in regard to its emergence, they are implying a comparison of the processes of development of the six civilizations. Implied also are the questions:

- -what were the characteristics of each of the centers which led to the emergence of civilization?

-what stages led to the result known as civilization?
-what is civilization?

In working their way through the text, students will probably see the dynamics of the development more clearly if they can become aware of these basic questions and can use them for guide posts as well as for measuring devices. For the less secure, less independent students, of course, they provide a reassuring certainty of procedure. Since students will rely so heavily on these objectives, it is most important that they see them as sensible and relevant to the text rather than as arbitrary.

2.A.1 Although only a paragraph long, the first section of this chapter prepares the student for the large jump--both in geography and in years--from Mesopotamia to the New World. Students should gain from this paragraph a clear awareness that:

-we have moved to a distinctly different place and time
-archeologists believe that civilization did develop here quite independently of the earlier civilization in Mesopotamia.

Some map work might be useful to establish the new location. A more difficult task will be to convince the students that when early man crossed the Bering Straits he did not bring civilization with him, nor was it brought over later. It is generally agreed that man did not originate in America; no remains of primitive, human species have ever been found here. However, the standard theory today is that the high level of New World culture which we call civilization was developed in situ, independent of events across the ocean.

In addition to the simple map exercise and Readings / differences between the domesticated plants and animals of the Old World and the New World might be used to further establish in the minds of the students that they are now studying a quite different place and that this place has elements of originality upon which archeologists base the theories which today seem most acceptable. For example, some archeologists believe that the climatic contrasts with which the Peruvian people had to cope had much to do with encouraging the development of civilization there. However, the great early civilizations of the Old World developed in areas of relatively homogeneous altitude and climate. Was the physical environment, which includes everything from arid desert to lush tropical forests a help or a hindrance to the development of civilization? Certainly the isolation of the river valleys, the need to be near water for irrigation, the fertility of the soil, the length of growing season played their parts in the unfolding drama of the emergence of mankind from his earliest levels of existence.

2.A.2 The next two sections of this chapter introduce the student to Peru specifically. In the first paragraph, a useful distinction is drawn between the study of the emergence of civilization in Mesopotamia and in Peru. The author tells us that

> since
> Peru did not develop writing
> then
> we must rely on only archeological findings
> and therefore
> our presentation is bound to be different.

Why? What is the difference between archeological evidence and other kinds of evidence? It may be that one good way to start this chapter is to begin with a provocative question, one which the students themselves asked, if possible, such as:

> Is writing really that important? Why didn't the Peruvians develop writing? Did the lack of writing affect the development of civilization there? Did it make any difference to them? What difference does it make to us?

Since writing is so essential in our culture, students might well become intrigued with the consequences of doing without it. In addition, watching for clues to the puzzling questions suggested above would give the students something very specific to look for. The answers would also be useful as the students begin to become conscious of the developing pattern in the emergence of civilization. They might remember that in Mesopotamia writing developed in a close relationship to increased long-distance trade, administration of cities and temples, and lists of names of kings. Students might look for possible Peruvian substitutes for writing, such as the Inca's quipu. But probably the most important question for the student to be aware of is: "what does the lack of writing tell us about the Inca civilization, and the cultural stages which led up to it?"

2.A.3 Since the book moves directly into a consideration of the physical environment of Peru, students' attention will be focused in this direction first. In beginning this section, students might spend some time on a more detailed consideration of a question suggested earlier: to what degree does the physical environment determine the behavior of man? Although it is generally agreed that environmental determinism is a thoroughly discredited theory, the physical environment does have an effect upon what man can do. It does not determine, however, what man will do. That is, if there are no trees, man cannot build with logs. But if there are both logs and rocks, man can build with either or both, but it is up to man to choose which he will use. In addition, of course, man is the only creature able to change his environment. With the variety of physical environment evident in Peru, students would be in a good position to consider whether there seems to be any evidence of influence upon the development of civilization.

Students might be asked, for example, to go through this section quickly and list the specific physical factors and then to speculate upon their possible influence. They should mention in their lists, at least the following: fertile soil in both the coastal and highland regions, adequate water or the possibility of irrigation, severe isolation of river valleys, good land at extremely high altitude, materials for building.

Students might become interested in a particular question, such as the effect of the isolation on the river valley communities. How does such isolation affect the people and their development? The reasons for the absolute lack of rainfall in parts of the Atacama Desert has been known to fascinate certain science-minded boys, and might well be suggested as a report which could be presented to the entire class. Information on the last two topics is available in most standard encyclopedias.

2.B. The next ten sections of the chapter describe a series of culture levels culminating in the civilization we know as the Inca Empire. The development described here is dynamic--it describes movement--movement through time, toward a new, qualitatively different, level of cultural attainment. However, to a space-age fourteen year old, the dynamics of pre-civilized cultural development may be obscure.

Some teachers have found it useful to put the cart before the horse at this point in the book. They have introduced the Inca Empire in all its splendor and glory and asked: how did this happen? This reversal is not a unique idea. Archeologists often do it. Starting with the written evidence, which was left by the early Spanish conquerors regarding the Incas, an archeologist might look for the developments which led to the zenith.

The Reading on the Incas could be used as an introduction or as a conclusion to the chapter, depending upon whether you decide to work forward or backward through time.

You might wish to introduce the vitality of the Incas into the chapter quite early and then follow the chronological order of the book searching for clues which would explain the ultimate culmination in the Inca Empire. In method this is a variation on the problem-solving approach. The problem is set for the students by presenting the Inca civilization to them and asking: how did this happen?

You might ask the students, on the basis of what they have already read, to make a list on the blackboard of those attributes and accomplishments which mark the Inca empire as a civilization. Of course the usefulness of the list will depend on the level of each individual class. You might wish to give more or less direction to the formulation of such a list by suggesting a review of Childe's criteria for Mesopotamia, or the chart which was developed for that region. Once such a list is formulated for the Incas, it is a valuable measuring device throughout the chapter, so a little extra time at this point might be well spent. It is, of course, difficult to judge just how much direction should be given to make the list accurate and valid, while still keeping it a product of the students' own efforts. The lists will probably vary from class to class, but they should be similar in the essential points. Suppose your list comprises these factors: cities, variety of occupations, surplus food, public buildings, organized, formal, religious activities, social classes, science, aesthetic sense, long-distance trade, government, military power. The students then need to clear up in their own minds just what they made the list for. They might be helped to figure that one out for themselves if you ask them precisely: why did we do this?

But what next? Now they have some general ideas of what factors make up the level of culture in Peru which is called a civilization. To make certain that all the students do know what they are expected to do, and why, you might ask them to jot down a paragraph explaining how they think they ought to proceed with the search for the roots of the Inca civilization. This could be done in a few moments in class. Some of the paragraphs could be read aloud. If differences of opinion develop in regard to procedure or method, these should be explored as fully as possible. It is almost certain that the following suggestions would be suitable to almost any view developed by the students in regard to how they will discover the roots of the Inca civilization.

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2.C. In the section titled "Incipient Agriculture," the gradual change from no agriculture to some agriculture is assumed. Because of the great importance of that change, you might want to refer your students to a quick review of parts of Chapter II. This brief section is important because it helps clarify:

- agriculture as a step toward civilization
- the importance of understanding the earliest civilizations

In talking about what life was like, students might compose a short list of attributes and accomplishment of the period on the blackboard. This list could then be saved and compared with similar ones from succeeding periods. It might also be compared with the description of the Incas to see if it reveals any clues.

2.D. In the "Early Formative Stage" (Chavin), life was more complex, and therefore more interesting to study. It would probably be wise to refer students to the map to notice the locations of these sites, and to be aware that these are only two of the several centers of the Chavin Cult. Students might be asked to comment upon any effect the location might be expected to have had upon the way of life. The fact that at this early period people belonged to religious organizations with several active branches might be even more surprising when it is remembered that there was no writing. The Reading from Mason, pp. 40-53, discusses this period.

Students ought to look for new variations on activities noted in the earlier period, as well as for anything new in the Chavin period. Special notice should be given to the introduction of flood water irrigation. The students should consider what this tells us about this culture. Also a comparison to the development of irrigation in Mesopotamia would be useful.

Again, the importance of the Agricultural Revolution is suggested when the author points out:

> The population had increased and there was more time for activities other than just the arduous getting of food.

The sentence certainly suggests a vital result of the Agricultural Revolution as well as implying the question: what did the Agricultural Revolution have to do with increase in population and in variety of activities? This might be a good opportunity to find out who in the class did not understand the fundamental importance of the Agricultural Revolution and to have another go at it.

Once again the section could conclude with the formulation of a list--the attainments and attributes of the Chavin stage. This could be compared with the earlier list and with the description of the Inca level.

2.E. The "Late Formative" or "Experimenter" period is, like the period preceding it, represented by two sites, one in the north highlands, and one in the south coastal area, although local cultures on the Experimenter level are found in all parts of Peru.

Before the students have read the section you might want to introduce the question: what do you think these people were experimenting on? Such a question might give you the opportunity to lead the class naturally to a discussion of the significance of some of the key terms of the section: technological, technology, techniques. These are dealt with briefly in the glossary, but both because of the confusing modern connotation as well as because of the inherent complexity of the terms, some special handling might be valuable. Students should look for the sorts of clues which will suggest that there are moves toward the Inca level of civilization. Any apparent set-backs would also be interesting to consider. The improvements in old ways of doing things such as canal irrigation instead of flood irrigation, and more domestication of plants and animals will surely be noticed, as well as the appearance at this stage of such new activities as terracing, the use of beer and cocoa, military fortifications. Then the following sort of questions could be asked:

-do the activities and methods described for this stage really represent "technology"?
-maybe there is technology, but are there indications of technological experimentation?
-if these people were experimenting (trying out new ways of doing things) what does this suggest about them?
-is there a link between improved agriculture, increased population, and increased warfare?

As a sidelight which might also give some insight, students might be interested to know that while the people of the Experimenter Period domesticated dogs and guinea pigs, the latter were domesticated, not as pets, but for food, which, archeologists tell us, taste not unlike rabbit.

2.F. The Florescent Period is often described as a period of at least six centuries during which Peruvian cultures attained and retained a high level of excellence. Students might be asked why this period is called "florescent." Something to do with light will almost certainly be among the reasons given. They may be surprised to learn that the term means blooming or breaking into flower, a quite different word from "fluorescent," which refers to the production of light.

The starting date of this period might also be worth noting because the beginning of the period coincides with the birth of Christ 8000 miles away. Most students probably know enough Bible history to have some idea of what life was like and what was going on in at least one other part of the world when the Florescent Period was beginning in Peru. The exact dating of the period, of course, is a matter of differing opinion among archeologists. However, certainly it is close enough to be useful.

Students might proceed through this section in a variety of ways. They might go through it specifically searching for **variations** and innovations.

But by now they are well experienced in that most simple means of analysis. Perhaps they are ready to search directly and knowingly for any cultural factors which could be identified as the root of the later, mature, Inca civilization.

Or, students might formulate a series of questions. The questions ought to direct them toward a more sophisticated level of understanding. They are now examining the remains of a complex society. They are now confronted with the complicated, often intangible, results of a whole series of factors. And they are being asked, not merely to identify, not merely to try to understand, but also to use their gleanings as a tool by which to understand yet another complexity: the emergence of the Inca civilization. And they are being asked to do all of this without the help of a single written word of history.

The questions which the students formulate should include ideas such as:

- with the changed central focus of this period, do the people seem to have discarded the earlier interest in religion and aesthetics?
- why do improved agricultural methods result in increased populations and who do the two factors result in changes in the role of military and political activities?
- What is a political state? is it necessary to a civilization?
- what can we surmise about the lives of the people if (a) a large labor force can be mobilized; (b) great amounts of wealth can be accumulated and concentrated; (c) massive public works can be constructed?
- are there any differences between the three sites? what causes the differences? anything besides physical factors?
- since we have more complete evidence for the Mochica, why bother with the Nazca and **Paracas** sites, since we know so little about them and have such scanty evidence?

The answers to the questions would probably reveal considerable movement toward the Inca, if compared to the earliest stages. Students might be reminded that archeology is sometimes described as 5% evidence and 95% deduction. A good example of this is in the first paragraph on Tiahuanaco.

The last paragraph of the section is a useful summary. Experienced students won't need to have it pointed out to them, but others might profit by being shown how it can be used as a sort of check-list of ideas and quick review.

2.G. Mystery--and theories ranging from fantastic to whimsical--surround the highland Tiahuanaco site of the Expansionist period. Located at 13,000 feet above sea level, on a bleak and chilly treeless plain, the background of Tiahuanaco is not known. The few Indians who live near the site seem to know nothing about its background. They are a primitive people. Did their ancestors quarry, transport and build the massive stone structures so perfectly cut and fitted? We do not have the answer yet, although we may not have to wait too much longer. Teams of archeologists are at work in that region now. Who knows what they will discover.

We do know that Tianhuanaco influence spread to all parts of Peru. Aside from advances in skills, the period represents the beginning of a new political level. Since the section in the text is very brief you may want to reproduce the Reading from Mason, pp. 88-95, for your students. Or you might wish to read it to them, or to summarize it for them.

By this time students will be able very quickly to make a list of the attainments and attributes of this new stage. For a really complete list, they'll need the additional reading suggested above. If your school does not provide facilities for reproducing materials easily you might want to ask students to compose their list from the selection while you read it to them. The list will help them perceive the movement toward civilization when this list is compared with the several others they have by now accumulated.

2.H. At this point you might wish to draw attention to the evidence of the emerging city. You might do this by asking them to look over their lists, and pick out the new factors. These could be written on the blackboard as the students suggest them. One of your sharper students might point out that a city seems to be developing. You might ask him what specific clues seem to indicate that a city might be starting--other students could then help in the formulation.

If no one mentions the beginning of cities, but the class offers instead lists of the elements of that level of culture, you might then pick out the specific ones which seem to be part of the evidence of the emerging city and ask them what might be the significance of those in particular.

Once having established that cities might be starting at this stage, students could review the early cities of Mesopotamia and compare them to the Tiahuanoca centers. Students might also consider why Childe included the city in his criteria for civilization in Mesopotamia, and other questions, such as:

-have the Tiahuanaco cities developed fully?
-is the lack of writing slowing down the emergence of cities?
-do the emerging cities of Peru seem to play the same role as the emerging cities of Mesopotamia?
-what is a city?

Because of the scarcity of information, your students will probably have only tentative answers, but even those can be valuable, and the search for them will lead you naturally into the next section in which cities do appear.

2.I. During the Chimu period, true cities are perceptible and the end of the long quest is nearly in sight.

If your study of the previous section included an attempt to decide what a city is, you might wish to utilize that groundwork as well as to emphasize the continuity of the development. Students might be asked to base a clear definition on the description of the Chimu city which is given in the text. This might be written out as a homework assignment, or worked out together in class. It might be beneficial to use the Chimu city as the basis of their definition at this point, because the modern city with which they are probably familiar is so dramatically different from the early ones. However, since they do have a firmly rooted image of what is meant by "city" it might be helpful if they could in some way compare their modern American image and the city of the Chimu stage. Chan Chan and Chicago present striking contrasts. Clarifying the distinction at this point might also help them distinguish the changes evident in the Inca cities, when they consider them. Such a discussion might result in the students asking, and attempting to answer such useful questions as:

-what is so important about a city?
-what is it supposed to do?
-is a city really essential to the development of civilization?
-are there different kinds of cities?

It is possible that students may arrive at the conclusion that the city serves the function of allowing large numbers of people to live in a small area in which conveniences such as food are available so that they themselves can perform work other than farming. Students might note that having a concentration of population in a city gives a ruler greater and more easily exercised political or military power. Or they might point out that people who live in a city often develop loyalty to it, to its rulers and to its tradition while people living in widely separated farms will not as readily develop a sense of "nationhood" or nationality.

Perhaps by this time the students will have even become aware that they have been witnessing a process--and that now they are watching the last, crucial stage in the transition from a pre-civilized to a civilized level of culture.

You might wish to end the section with the provocative question suggested by Willey in the final paragraph. Whether a city, or a nation, or civilization as we know it, carries within itself the seeds of its own destruction might well spark an exciting discussion among our nuclear warfare-age children. Although frightening, it is sometimes wholesome to provide an opportunity for such discussion--students certainly think about the question. It might be a valuable point of reference also in the consideration of the causes for the fall of the Inca empire. If you are using this unit in conjunction with an Ancient History or a world history course, such a discussion might also be useful in examining the decline of the Greek polis, the Roman empire, etc.

2.J. Just as at other points of transition, there are some gaps in our record of the transition from the Chimu period of urbanization to the Incas and the emergence of civilization. We can gather that the claim of the Incas to imperial control was not unchallenged. The lack of written records puts us at a severe disadvantage. Students might be interested to look into some of the other civilizations described in this text to find out at what stage writing developed in them. They may be impressed with how much easier the presence of writing in the other civilizations makes the task of the archeologist and anthropologist. Fortunately, there must have been some inveterate collectors among the Spanish invaders. These men seem to have collected the myths and legends of the Incas much the way some people go about collecting folk songs today. As such collectors often do, they seem to have gotten several versions of each story, but we can piece together some of the probable background of the Inca empire from them. These, added to the artifacts archeologists are uncovering, give us an increasingly expanded view of the civilization which emerged in Peru.

You might wish to ask your students to read again the selection on the Incas, and to look over the description of the Inca civilization which they made at the beginning of this chapter. Then you might suggest that they organize the lists into a comprehensive chart showing the development of the civilization through the stages we have just studied.

You might wish, in addition to consider these suggestions for the further understanding of the significance of the Inca empire:

- -compare the extent of time and of area of the Inca conquests with those of Alexander the Great
- -consider Willey's question which was discussed earlier in relation to the fall of the Inca power
- -compare the military and political career of Toca Inca Yupanqui to that of Napoleon, Genghis Khan, Caesar
- -compare the duration, extent and accomplishments of the Incas with that of the civilization which emerged in Mesopotamia
- -does the lack of writing seem to have had a serious effect upon the development of civilization

Chavín*

Chavín takes its name from the site of Chavín de Huántar in the northern highlands on the east side of the continental divide on a small tributary of the Marañon River, just across the divide from the Callejón de Huaylas. It is not a large site, and Peruvianists believe that it was only one of several ceremonial centres of the Chavín cult. But at any rate it is the most important of the few known typical sites, and the largest one on which detailed reports exist. However, nothing but very superficial excavations have yet been made there.

The land available for agriculture in the small valley surrounding Chavín is limited and could never have supported a large population; it was not the centre of a populous district. Nevertheless, a considerable body of men must have been occupied for a long time in its construction. Although it contains many rooms, they were not well suited for habitation, and the buildings were almost certainly not residential; they may well be compared with the stone buildings of the Maya of Middle America, composing a ceremonial centre.

The complex covers a considerable area.[1] For a space of over eight hundred feet (250 m.) square, the surface is completely landscaped, with a sunken court, raised platforms, terraces, plazas, and stone edifices, oriented to the cardinal points, principally east-west. Though there are a number of buildings, one, known as the Castle (Castillo), far exceeds the others in size and importance. Fortunately it is — or until recently was — rather well preserved, for it is unique — much the largest of the few known similar structures of this ancient period. In this highland region old buildings were neither torn apart by lush tropical vegetation as were the Maya structures, nor covered with drifting sands as in the Near East.

For probably the earliest-known large stone edifice in Peru, the Castillo is remarkably advanced architecture, and there can be no question that a long period of architectural development in masonry lay behind it somewhere. The plan is complex and it must have been built from the first stone with the finished structure in mind, if not according to a drawn plan or a model. It consists of three floors — more than were built at any later period in Peru — all of dry stone masonry. The building even contains a system of ventilating shafts, both vertical and horizontal, so efficient that it is said they still provide fresh air for the interior rooms — surely the work of no amateur masons. However, the walls are massive and thick, faced with selected split stones, and filled with rubble. The outer walls are faced with large rectangular dressed stones laid in courses of various widths, alternately thick and thin.

The Castillo is an immense complex building, large and square, about 245 by 235 ft (75 by 72 m.). It is still about 45 ft (13 m.) high at one corner. The outer walls are slightly battered, i.e. slope inwards towards the top, where also they are set slightly back in several narrow terraces. Originally there was a row of large projecting carved heads, inserted in the walls by means of tenons, which encircled the building below a decorated cornice; a few of these heads still remain. The interior consists of a maze of walls, galleries, rooms, stairs, ramps, and ventilating shafts on three floors. The rooms and galleries are rather low, about six feet (1·8 m.) high, the galleries only about a yard or metre wide, the rooms from about six to sixteen feet (2-4·5 m.). There are no external windows or doorways except for the main entrance to the first floor, reached by a stairway of perfectly cut rectangular blocks, as beautiful plain masonry as was ever erected anywhere.

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* J. Alden Mason, Ancient Civilizations of Peru, from pp. 40-53.

[1] Bennett, 1944.

The edifice is massive as well as immense; the rooms and galleries are of less cubic area than the walls and other masonry. They are dark, without any lighting. Great broad slabs form the ceiling of the room below and the floor of that above, and the roof slabs are covered with earth which formed the foundation for several small rectangular masonry houses that were built upon them. In one of the galleries a large, tall vertical carved stone known as the Lanzón was discovered.

The status of archaeology in Peru and the immense amount of work that remains to be done there may be judged from the fact that this great, significant, and almost unique edifice has never been carefully studied. No detailed plan exists; in fact many of the rooms and galleries have never been entered, for many — or most — of them have never been cleared of the stones and debris with which they were apparently filled in ancient unrecorded times. Sad to report, such studies may now have become impossible or prohibitively expensive, since the structures were largely covered by a great landslide only a few years ago, in 1945.[1]

Though overshadowed by the Castillo, the Chavín de Huántar complex consists of many more features such as plazas, platforms, terraces, and mounds. The mounds, and apparently also the platforms, seem, like the Castillo, to be masonry constructions, honeycombed by galleries.

Chavín influence extended quite a distance to the north, since several little-known sites, such as Kuntur Wasi and Pacopampa in the Department of Cajamarca, show rather definite Chavín characteristics in architecture and sculpture.

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The nature of the Chavín horizon has long been a mooted point. The natives Peruvianists have thought of it as a cultural entity, possibly even a pre-Incaic empire, at any rate a 'civilization'. Tello, its principal protagonist, thought that it was brought to the coast by a migration from the Andes, and that it originated in the Amazon region. Larco Hoyle believes that it began with the Cupisnique people on the northern coast and was carried by them to Chavín de Huántar and other highland parts. The opinion of United States Peruvianists, as formulated in a masterly paper by Gordon Willey,[2] is that it was not a homogeneous culture, but the expression of a widespread and rapidly diffused religious cult.

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[1] It is now (1956) being cleared by the national Dirección de Arqueología.

[2] Willey, 1951b.

While these sites on the Chavín horizon show a basic cultural similarity, they differ considerably in detail, more than would be expected of a homogeneous culture. The common possession, the determinant feature of Chavín, is a similar art style. This emphasizes a feline —jaguar or puma — treated in a characteristic stylistic manner. It is, as epitomized by Willey, 'a matter of line, of composition, of emphasis. It is the curvilinear forms, the massive heads, the intricately, disposed small heads, the locked and curved fangs, the claw feet, the prominent nostrils, and the eccentric eyes.'

Presumably this feline being was a deity whose cult, with its characteristic stylized representation, spread over the region of Chavín influence. Apparently it carried with it no technological concomitants, and almost certainly was carried by no proselytising crusaders, at any rate by no vanquishing ones. The Chavín tradition, however, persisted almost throughout all of Peruvian history; the feline element in art — and probably in religion — was a strong feature in both the Nazca and Moche regions and periods, in the Huari-Tiahuanaco pan-Peruvian horizon, and even later.

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It has been suggested that such great structures as Chavín de Huántar were shrines to which pilgrimages were made from a large surrounding region, and centres in which the entire population gathered on definite occasions for ceremonial celebrations and for markets. This is a Peruvian — and a nuclear American — cultural pattern of long standing, as exemplified, for instance, by the great pan-Peruvian shrine at Pachacamac, and to-day by the great annual romería at Copacabana, Bolivia. It was probably at these times that the assembled multitudes built — or at least assembled the great amount of materials necessary for — the immense structures and edifices. A small number of trained architects and masons could then work during the long intervening periods, while the great body of the people, returning to their villages, disseminated the new cultural developments — together with the gossip — that they had learned during their pilgrimage.

The Historical Empire*

In addition to being a conqueror, Pachacuti was evidently a great civic planner. So many great works are ascribed to him that he seems to have been a minor culture hero, getting credit for many things done about this time. It is said that he made the city plan of Cuzco and erected many of the important public buildings there, especially enriching the Temple of the Sun, in which he placed the bodies of his seven imperial predecessors. To increase the size of the city and to give its inhabitants more land he obliterated all the villages for about a six-mile radius, and sent their populations to occupy other more distant areas. The cyclopean agricultural terraces in the Cuzco region are ascribed to his initiative and direction, as well as the gnomon towers erected on the Cuzco skyline to determine the solstices, or at least to indicate the times for agricultural activities. Some of these accomplishments he probably completed before setting out for his conquests, or in his rest periods between campaigns; most of them he probably planned and left to be carried out by subordinates during his absences.

The great British South Americanist, Sir Clements Markham, has called Pachacuti 'the greatest man that the aboriginal race of America has produced', to which encomium the great American Peruvianist, Philip Means, gives his enthusiastic approval. He demonstrated his stature not only in accomplishments but in intellect.

The great and sudden expansion of the Inca empire is one of the marvels of history. It effectually began with the inauguration of Emperor Pachacuti, generally dated at 1438, was almost at its maximum at the time of the death of his son, Topa Inca, in 1493, and ended in 1532 with the conquest by Pizarro, just a little less than a century after its beginning. In little more than fifty years father and son extended Inca domination from northern Ecuador to central Chile, a coastal distance of close to 3000 miles, and an area of about 350,000 square miles. Possibly one must look to Philip and Alexander for analogous careers. Though some of the tribes offered vigorous resistance that delayed their conquest, nowhere did the Inca armies meet any nation that was able to compete with them; even the strong Chimu 'kingdom' of the north Peru coast was no match for them. Pachacuti and Topa Inca rank with Alexander, Genghis Khan, and Napoleon as among the world's great conquerors. It was apparently the conqueror's thirst for aggrandizement and power that provoked the Inca conquests; no enemy threatened them, neither did they need additional territory for economic reasons.

Apparently, Pachacuti assembled the Inca forces with intent to bring all neighbouring peoples under his control. Those that did not submit at once and pay homage to him were attacked. The first victims were groups within about twenty miles of Cuzco. These old hereditary enemies were apparently not treated with the leniency that attended later conquests at greater distances; it seems that there were old scores to be settled. According to Sarmiento, all except children and old women were killed. The first groups thus to feel the weight of the new Inca power were the Ayamarca, the Cuyo, and the towns of Ollantaytambo, Cugma, Husta, Huancara, and Toguaro.

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*J. Alden Mason, Peru, pp. 116-31.

The next campaigns took Pachacuti to the lower Urubamba Valley and Vilcapampa to the north; then he turned west to Vilcas and Soras, beyond the Quechua and Chanca country. Next came the near-by provinces to the south, Aymara, Omasayo, Cotapampa, and Chilque, and soon almost all the mountain provinces for a considerable area surrounding Cuzco had been subjugated. Pachacuti then turned his interests towards the more distant north, and sent general Capac Yupanqui, his brother, to conduct a campaign through Angara, Huanca, and Tarma, which were added to the realm. As was a frequent Inca custom, the general bore the same name as a former emperor, which practice must have been the cause for much of the disagreements among the Spanish chroniclers, and for the confusion among their commentators.

The Inca armies consisted largely of troops recruited or drafted from conquered tribes or nations; the Inca themselves were too few to supply the great forces required. The allies generally fought well, though not so desperately as the Inca themselves. A large body of Chanca warriors, recently subjugated by the Inca, therefore formed a part of Capac Yupanqui's army. These were under the command of their former chief who had been for some time a prisoner or hostage in Cuzco, for it was the imperial policy to put the foreign troops under the command of one of their own people. The Chanca so distinguished themselves in their first battle that invidious comparisons were made between them and the Inca. According to Sarmiento, when Pachacuti heard of this he feared that the Chanca might become intransigent, and so ordered Capac Yupanqui to have their leaders killed. Anco Ayllo, the Chanca leader, was secretly informed of this command and deserted and fled with all his followers to the forested jungles of the eastern Andes. Capac Yupanqui followed but was unable to overtake them.

Capac Yupanqui had been given strict orders by his brother Pachacuti not to march beyond Yanamayo but to establish there the boundary markers of the empire. But in pursuit of the Chanca he progressed beyond the limit, to the province of Cajamarca. Finding it populous and wealthy he completed its conquest and brought back to Cuzco a great booty and the sons of the vanquished rulers. Pachacuti had him executed there, ostensibly for disobedience to orders and for letting the Chanca escape. Capac Yupanqui, however, had apparently been boastful and had bragged that his conquests were greater than his brother's; the latter was jealous and also fearful that Capac Yupanqui would aspire to the throne and would start a rebellion, supported by his great army.

The practice of mitima was probably adopted about this time. To forestall rebellion in conquered regions the inhabitants were transferred en masse to other parts of the empire, their places being taken by peasants who had been longer under Inca rule, their spirit of independence broken.

Pachacuti next turned his attention to the region of Lake Titicaca where the Inca's old rivals, the Lupaca, were fomenting trouble and had induced some towns to revolt. The emperor soon quelled the rebellious villages and then continued on to crush the Lupaca nation on the south-western shore of Lake Titicaca; he also proceeded a little way around the south end of the lake. His next campaign was against the Chumpivilca, not far south of Cuzco, who had somehow until then escaped in the conquest of the rest of this near-by region.

Pachacuti was by this time getting along in years and had begun more and more to rely on his equally capable son Topa Inca, and to permit the young man to lead some expeditions, which the latter handled most creditably. Between them they carried the Inca empire practically to its maximum extent, and in a space of about thirty years, c. 1463 to 1493, increased its area by about a thousand per cent.

According to Sarmiento, Topa Inca Yupanqui had two brothers, considerably older, who had conducted successful campaign against the Colla, a strong Aymara-speaking group of the Titicaca highlands who were frequently in revolt. In fact, the boy was born while Pachacuti and his two elder sons were engaged in quelling one of these revolts. For some reason, Pachacuti immediately decided to make him his successor. The boy was kept rather secluded until he was about fifteen years old, when the old emperor officially announced him as the next ruler. The two elder sons continued the subjugation of the Colla while Pachacuti devoted his attention more to the building of magnificent palaces and other edifices in the environs of Cuzco, and to the celebration of religious ceremonies.

The first great campaign of Prince Topa Inca was far to the north. He marched through the northern mountain provinces of Peru, consolidating those conquered by his father Pachacuti and continuing to the borders of Ecuador. No nations of any great importance or strength then existed in northern highland Peru, but in Ecuador were several of relatively high culture, approaching that of the Inca themselves, as evidenced both by historical traditions and by more recent archaeological studies. Most important were the Quitu, who occupied the region surrounding the city of Quito, the capital of modern Ecuador.

Several other groups of relatively high culture but of less political importance lay between Quito and northern Peru. First to be met by the Inca armies, advancing from the south, were the Cañari. Finally conquered, after valiant resistance, the Cañari became and remained a loyal portion of the Inca empire. As in all conquered territory, the country was reorganized on the Inca pattern, and temples, forts, palaces, and roads were built. Topa Inca took a great liking to Ecuador — with which preference future emperors concurred, probably because of the less arid countryside — and it is reported that he especially favoured this region with many edifices and other constructions of the best quality. He also organized a personal bodyguard of Cañari warriors.

After the reorganization and consolidation of the Cañari region, and the assembling of a large army, the campaign was pushed farther northward to the borders of the land of the Panzaleo, through areas of somewhat lower cultural scale. Then the customary concilatory messages were sent to the chief of Quito, inviting him to join the pan-Andean co-prosperity sphere, which meant, of course, to yield to Inca arms and domination — or else.

The Quiteños were a proud people, accustomed to dominance, not subservience, and the 'king' returned the indicated answer. The war was long and bitter, but Quito finally fell.

During the course of the war with Quito, Topa Inca made an expedition to the coast in the region of Manta and Huancavilca. Here he was told of some islands, well populated and rich in gold, far off the coast, to which traders sailed in large rafts with masts and sails. Curious and covetous, he is reported to have prepared a great expedition with a flotilla of rafts and many men, sailed to the islands, and taken possession of them, bringing back some 'Indian prisoners, black in colour, much gold and silver, a seat of brass, and the hides of animals like horses', according to Father Cabello. One's imagination immediately recurs to the Galápagos Islands, and Sarmiento de Gamboa specifically identifies the legendary islands with the Galápagos, which he discovered in 1567. There is no evidence of the former existence of peoples of any high culture on these islands, and until the present it has always been believed that they had never been seen by men until Spanish days. However, in January 1953, Thor Heyerdahl found potsherds in James Bay and in two valleys on Santiago Island, and on Black Beach on Floreana Island. The pottery was mainly plain except for some pieces with toads in relief. It could not be identified with any well-known ware, but showed some resemblance to pottery from the Chimú region or the Ecuador coast. The carved stone statue that Mr. Heyerdahl went to investigate turned out to be very recent.

The fall of Quito left but one important independent nation in Peru and Ecuador, that of the old highly cultured Chimú on the north coast of Peru. Like most old civilizations, their vigour had apparently been sapped by years of peace and comfort, and they were ill-prepared to cope with the virility of the conquering Inca hordes. The frontiers of Chimu territory towards Cuzco had been fortified by such works as the great fortress of Paramonga, but the Inca advanced from the north, taking the Chimu on the flank. The struggle was short and uneven; the Chimu ruler wished to fight on to death, but his counsellors realized the hopelessness of the cause and induced him to surrender before many had been slain.

After subjugating the Chimu, Topa Inca Yupanqui continued down the coast, imposing Inca rule on all the coastal valleys, probably then independent states, to about the latitude of present Lima. The sons of the Chimu and other rulers were sent to Cuzco to be indoctrinated with Inca ideology and to serve as hostages for their fathers' good behaviour; the government was reorganized according to Inca pattern, but otherwise the life of the conquered people was altered little if any. In a second campaign, the coastal valleys as far south as Nazca were incorporated into the empire.

Of the history of these coastal peoples — at any rate of those to the south of the Chimú — we know historically nothing; they are known only by their archaeological remains. They may have spoken a dialect of Inca — or a language closely related to the Inca — or some quite unknown language; Inca Quechua had apparently replaced the earlier language by the time of the Spanish conquest.

Pachacuti had now been emperor for thirty-three years and was getting old (Sarmiento says one hundred and twenty-five!) For some years he had left the military aggrandizement of the Empire to his virile son, and had devoted his attention to internal affairs. In 1471, he abdicated in favour of his son Topa Inca Yupanqui, and a few years later he died.

The Indians of the tropical forests on the eastern slope of the mountains were a mild threat to the peace of the empire. Not that they offered any great danger, but they undoubtedly frequently provoked border troubles. Topa Inca decided to put them under control, or at least to teach them the fear of Inca might. One may suspect that the campaigns somewhat resembled those of British regimental commanders against Indians in the American colonies. Anyway, Topa Inca conducted such campaigns in the upper Madre de Dios River by way of Paucartambo. The legends speak of a great army descending the river in an immense flotilla of canoes.

Apparently, before the forest campaign was finished, or the wild tribes completely subdued — possibly a Sisphean task — a revolt broke out in the region of Lake Titcaca. The Colla and Lupaca, Aymara-speaking groups that had formerly been rivals of the Inca for hegemony, were again restive under Inca rule, and awaiting an opportunity to regain their independence. The absence of the emperor and his armies in the deep forests seemed to present this opportunity, especially since a deserter reported to them that the Inca army had met defeat, the emperor killed. The Pacasa and Omasuyu, other Aymara-speaking nations, joined the Lupaca and Colla, but the revolt was not a pan-Aymara one, since some Aymara groups, not yet brought under Inca rule, did not partake, and some others, already conquered, remained loyal.

There could hardly be a better illustration of the extraordinary organization of the empire than the fact that the Inca armies were able and prepared to transfer operations quickly from the tropical forests, close to sea-level, to heights of 12,000 ft., and to wage a successful campaign there. Overcoming a stubborn resistance, they captured the hill of Pucara, which had been fortified, and then proceeded to invest the entire province of the Colla. Another battle was fought with the Pacasa and Lupaca at the Desaguadero River, south of Lake Titicaca, in which the Inca armies were again victorious, and the rebellion was quelled.

By this time the lust for power had apparently taken full possession of the Inca, and Topa Inca Yupanqui longed to have every region known to him under his sway. His next campaign was eastward into Bolivia, and the highlands of this region were soon added to the empire. Northern Chile came next, and in a series of campaigns this country was subjugated as far as the Maule River where, at the modern town of Constitución, Topa Yupanqui decided to place the southernmost limit of the empire; it was never extended farther.

Doubtless the practical difficulties of conducting a campaign at such a great distance from the base were very great; the problems of administration would have been equally difficult if the conquests had been carried farther southward. Moreover, the forested region could have had little appeal to the Inca. Primarily, however, it was almost certainly the fierce resistance of the indomitable Araucanian Indians that stopped the Inca advance. Physically and temperamentally they much resemble the Indians of the Great Plains of the United States, especially in their zeal for independence. They fought the Spanish with equal vigour, both in early days and in subsequent frequent revolts, and they were not completely pacified until 1883. To-day they still occupy a large part of their former region, a fine, upstanding, vigorous people.

The Araucanians in the northern part of their territory were pushed southward and their lands were taken over by the Inca, but as the density of the people increased, their resistance strengthened until at last the Inca ceased their offensive, consolidated their gains, and set their boundary.

After one more small expedition into the eastern forests Topa Inca Yupanqui ended his military career, one that ranks with those of the greatest of conquerors. He, too, was now getting old, and he retired to Cuzco to oversee the organization and consolidation of his realm, and to enjoy the comforts of the imperial court, not the least welcome of which was, of course, his large seraglio.

One of Topa Inca Yupanqui's great accomplishments, apart from his conquests, seems to have been the building of the great fortress of Sacsahuamán protecting Cuzco, or, at least, the great enlargement of the immense work. In his declining years he had a palace built for himself on the plain of Chita, to which he retired, gravely ill. Soon after naming his son Tito Cusi Hualpa or Huayna Capac as his successor he died about the year 1493 — the year after the landfall of

Columbus — after a reign of some twenty-two years.

The introduction of several other customs or regulations of the later days of the empire are ascribed to Topa Inca Yupanqui. Apparently he was the first to have a census made of the entire empire, and to set up the pyramidal decimal system of administrative officials through which the population statistics were kept accurate and current. To do this he deposed all the old hereditary chiefs and replaced them by the appointed curacas. The introduction of the tripartite division of land and labour is also credited to him, as well as that of the 'Chosen Women'. He apparently also inaugurated the yanacona class of servants.

Practically all the chroniclers agree that Topa Inca Yupanqui's queen was his own sister, Mama Ocllo. This practice must have been a permitted custom for some time, and it has been ascribed by some of the chroniclers to some earlier emperors, but this was apparently the first unquestionable case, and set the pattern for later emperors. Sarmiento says that Topa Inca Yupanqui was eighty-five years old at the time of his death, also that he left two royal sons, sixty natural ones, and thirty daughters. Of his royal sons he chose Titu Cusi Hualpa, better known by his official later title of Huayna Capac, as his successor.

Although the reign of Huayna Capac was a long and successful one, and though he brought the empire to its maximum extent, the apogee of Inca greatness probably passed with the death of Topa Inca Yupanqui. Considerable unrest filled the reign of his son. With the slow means of communication and transportation then available, the empire was too great to be successfully administered from one centre by one man, a quasi-divine being without whose sanction hardly anything could be done.

Early in the reign of Huayna Capac began those dynastic troubles of succession that were to become so acute with his sons. He was very young at the time of accession, as was evidenced by the title that he assumed then, meaning 'The Young Chief Rich in Virtues'. One of his half-brothers, son of one of his father's concubines, made a claim to the throne on the grounds that it had originally been promised to him. There seems to have been some justification for this pretension, which was supported by the large body of Capac Huari's relatives and friends. Apparently, however, the dispute never developed into open strife; the majority of the court, officials, and people supported the royal son and the choice of Topa Inca Yupanqui, and the pretender's mother, who had engineered his claim, was put to death as a traitress. A somewhat similar event took place shortly after Huayna Capac's accession. As he was then very young, a regent was appointed who schemed to seize the throne. The plot was thwarted by the Governor of Chinchaysuyu, who executed the culprit and assumed his post, which he thereafter administered with honesty and efficiency.

Huayna Capac was not the great conqueror that his father was; possibly he could have been, but there were few more worlds for him to conquer. The empire had reached almost its maximum possible extent; to the south were the indomitable Araucanians, to the east the wild tribes of the tropical forests, both of them in regions strange and uninviting to the Inca. Only to the north were peoples of rather similar culture that could be assimilated, with habitats of relatively similar nature.

After the usual several years of travels of inspection through his realm to become somewhat familiar with it and its problems of administration, a custom that had been followed by several of his predecessors, Huayna Capac set out on his first military expedition to subdue the rebellious Chachapoyas; without great difficulty he pacified these, as well as subjugating some other hitherto unconquered neighbouring tribes. He thus enlarged the empire in the provinces of Chachapoyas and Moyopampa on the edge of the tropical forests in north-eastern Peru. After returning to Cuzco, celebrating the victory, and enjoying a little rest, he made another tour of the empire, journeying to its limits in present Bolivia and Chile. Dismissing incompetent officials and promoting efficient ones, and ordering the construction of engineering works, he saw to the welfare of his people and their land.

Reports then came to him of revolts in Quito and other provinces in Ecuador. He assembled the usual great army and started northward on a campaign of pacification and conquest, taking with him two of his natural sons, one of them Atahuallpa, his favourite, who later became the emperor captured and executed by Pizarro. Huayna Capac first proceeded against the Pasto, one of the northernmost groups. In the first encounter the Inca army was routed by the Pasto through a crafty strategem. Most of the able warriors retired before the Inca advance, leaving the women and children and a few men. Pleased at the easy occupation, the Inca armies were celebrating it when the Pasto warriors fell on them, driving the advance-guard back on the main army with great slaughter. Of course, in the end, the Pasto victory was of no advantage, for their land was soon savagely ravished.

The rest of northern Ecuador was conquered with considerable difficulty, as the inhabitants fought bravely. The most obstinate resistance was offered by the Cayambi, apparently a Cara tribe in north-eastern Ecuador. They defended several fortresses desperately and valiantly, and drove the Inca forces back several times with great losses. One of Huayna Capac's brothers, leading one attack, was killed and the emperor himself was knocked down and barely rescued. The stronghold was taken at last by a cunning manoeuvre. The emperor sent a large part of his force to make a long detour of several days while he attacked openly. Giving his encircling general time to reach the rear of the fort, and at a prearranged time, he then feigned repulsion and flight; pursued by the entire garrison, the fortress was then easily taken by the army approaching from the rear. The Cayambi, now in the open, were soon annihilated by the Inca forces.

Huayna Capac set up the boundary stones indicating the northern limit of his empire at the Ancasmayo River in the land of the Pasto. It was never extended farther in that direction, and still remains the boundary between Ecuador and Colombia.

After pacifying and reorganizing highland Ecuador, the Inca turned towards the coast, where, around the Gulf of Guayaquil, were some yet unconquered tribes. These were subjugated without great difficulty, and considerable booty of emeralds, turquoise, and mother-of-pearl was taken. With this, the campaigns of conquest of Huayna Capac and of the Inca emperors came to an end. The empire had reached its maximum extent, approximately 380,000 square miles, about equal in extent to France, Belgium, Holland, Luxemburg, Switzerland, and Italy combined, or to the Atlantic Coast states of the United States. From north to south it stretched over 2500 miles (4000 km.).

Just before the death of Huayna Capac, about the year 1523, two interesting things happened. The empire was attacked by a foreign enemy, and the Inca had their first sight of a white man, who accompanied the invaders. The story of this Spaniard who saw Peruvians about a decade before Pizarro is not generally known to history.[1] Alejo García by name, he travelled with a band of Chiriguaná Indians from Paraguay to the eastern foothills of the Andes in Bolivia; he and a few companions, who probably accompanied him on the long journey, had been shipwrecked a few years before on the coast of Brazil. He was killed on his return to Paraguay before, unfortunately, he was able to write or recount his memoirs.

The Chiriguaná were a tribe of Guarani-speaking Indians who made a practice, from time to time, of crossing the Paraguayan Gran Chaco to raid the eastern frontier Inca settlements of the province of Charcas in bolivia in order to obtain bronze implements and gold and silver ornaments. Eventually they conquered some of the more primitive tribes of the eastern foothills and displaced them. While by no means threatening the existence of the great empire, they did cause some border troubles, and the Inca built several fortresses on their eastern frontier to control them. The Chiriguaná captured at least one of these, but were defeated in battle by Huayna Capac's general, Yasca.

In the year of his death, probably 1525, rumours began to reach Huayna Capac of the white men at Panama and of exploring expeditions down the coast.

With the death of Huayna Capac a schism rent the empire for the first time. He felt great affection for the region of Quito, Ecuador, and spent the final years of his life there in poor health; probably the climate, with its greater rainfall, appealed to him more than Cuzco. He had two prominent sons: Huascar, son of the queen, his sister, the legal heir; and Atahuallpa, his favourite, son of a secondary wife. Atahuallpa resided with him in Quito, Huascar in Cuzco. Huayna Capac had had as his queen an elder sister but she had borne no children and so was supplanted or supplemented by a younger sister, Arau Ocllo, mother of Tupac Cusi Hualpa, later known as Huascar. The chroniclers differ as to the identity of Atahuallpa's mother, but she may well have been, as some report, the daughter of the deposed 'king' of Quito.

According to one account, before his death Huayna Capac proposed to divide the empire, separating the 'kingdom' of Quito from the rest, and establishing Atahuallpa as its ruler; Huascar is said to have agreed to this. Sarmiento has it that a great pestilence, probably smallpox or measles, introduced by the Spanish, was then raging the country. Huayna Capac, dying of it, was asked to name his successor; he named his sons Ninan Cuyoche and Huascar, but the omens for both proved inauspicious. Before he could name another, Huayna Capac died. The High Priest then set out to give the imperial fringe to Ninan Cuyoche, but found that he also had died. Huascar was then chosen. Sarmiento does not mention Atahuallpa in this connexion. At any rate, Huascar was installed as emperor by the High Priest in Cuzco while Atahuallpa was supported by the army and people in Ecuador.

It would almost seem that, as the Spanish believed, it was the divine plan that the great empire should be rent for the first time by civil war while the foreign invaders were planning its conquest. Had they come a decade earlier or later, the few men under Pizarro could hardly have accomplished their miraculous exploit.

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[1] Nordenskiöld, 1917; Means, 1918b.

It is not certain whether Atahuallpa originally intended to rebel and either to separate Ecuador from the empire or to claim the Inca throne. At first, whether sincerely or not, he seems to have given allegiance to Huascar. But the latter suspected him and maltreated the envoys that Atahuallpa sent to him, executing some of them, which act caused considereable ill feeling against him in Cuzco where the men had influential relatives. Both half-brothers then began assembling armies for the coming test of strength. Meanwhile the people of the province of Huancavilca deemed the time propitious for a revolt, but this was promptly quelled by Atahuallpa.

Huascar marched north with his army and met that of Atahuallpa at Riobamba. Like so many great battles of history better known to scholars, thousands of men died for the personal glory of their leaders. Sarmiento says that in his day the plain was still covered with their bones.

> But things like that, you know, must be
> At every famous victory.

Atahuallpa was the victor.

Huascar had another small force which caught the army of Atahuallpa resting and unwatchful after the battle, and caused it much loss, but Atahuallpa again attacked and was again victorious. Several other engagements were fought, terminating in battles at Cajamarca and Yanamarca; in all, it appears, the forces of Atahuallpa prevailed.

Atahuallpa's continued successes may probably be ascribed to the fact that he had in Ecuador his father's experienced army, as well as the best generals in the empire, Quisquis and Challcuchima. Whatever his first intentions, as soon as his armies began to register victories he gave up any thought of separating Ecuador from the rest of the empire or of offering any allegiance to Huascar, and determined to supplant him. The schism was not a national rebellion on the part of Ecuador so much as merely the following of an admired leader.

Atahuallpa journeyed south in the wake of his victorious armies, making his headquarters at Cajamarca. He was acclaimed emperor by the people through whose lands he passed, and assumed the imperial fringe of sovereignty. Success went to his head, and he apparently became very autocratic, self-conceited, vain, and cruel. Sarmiento tells a story that about this time he consulted an oracle which predicted that he would come to a violent end. Furious, he personally cut off the head of the old priest who had interpreted the prophecy, and demolished and utterly effaced the oracle and the waca.

Huascar set out from Cuzco with his remaining force for a last defence against the advancing enemy; he had made the most solemn sacrifices and consulted the greatest soothsayers, but most of their replies were unpropitious. The armies met at Cotabamba on the Apurimac River not far from Cuzco. Huascar's forces prevailed on the first day and he felt confident of victory when Atahuallpa's generals, Challcuchima and Quisquis, withdrew to recuperate. However, the following day his men were ambushed in a ravine, one division after another, and annihilated or captured. Challcuchima himself seized Huascar, pulling him out of his litter. Huascar's men lost heart at learning of the capture of their emperor and fled, hotly pursued by the victors, who established their new headquarters — and Huascar's prison — on the outskirts of Cuzco. Challcuchima contributed much to the flight by the crafty stratagem of having himself carried back in Huascar's litter, thus deceiving the latter's soldiers into thinking that he was their emperor, returning victorious with prisoners.

The people of Cuzco naturally feared that the city would be looted and the inhabitants slaughtered, but Atahuallpa's generals were wise administrators as well as capable warriors. They sent word that, the civil war being over, they were all one people again; there would be no reprisals. The Cuzqueños therefore came out and pledged allegiance to their new emperor, Atahuallpa. Nevertheless, several of Huascar's five principals — three generals and two high priests — were executed, and the others chastised and compelled to pull out their eyelashes and eyebrows as offerings to the new emperor. Huascar's mother blamed him for his unwise actions and slapped his face.

Atahuallpa, however, according to Sarmiento, was not so magnanimous. When he heard of his victory, receiving word at Cajamarca from his conquering generals, he ordered the entire family of Huascar, wives, children, and babies, to be killed and fastened to poles along a highway leading out of Cuzco. Huascar was compelled to watch the executions, which apparently extended even to his brothers and sisters, therefore close relatives of Atahuallpa. More than eighty of his children were thus killed, as well as most of his chief friends and supporters. Those of his concubines who had not borne him children and were not pregnant were spared.

Handbook: Chapter 4

Approximate daily schedule

Day 1
Students read entire chapter (pages 29-41) and prepare to answer the question: "Why are we asked to study the emergence of another civilization?" Review basic geographical facts concerning Andean sites and establish that when early man crossed Bering Straits he did not bring civilization with him nor was it brought to the New World at a later date.

Day 2
Students re-read section, "A Civilization Without Writing," (pages 29-30). How does the situation in Peru compare with that in Mesopotamia? Why didn't Peruvians develop writing? Did it make any difference to them? What difference does the absence of writing in Peru (or the presence of writing in our own society) make to us? Strong possibility for a class debate on the subject: "Is Civilization Possible Without Writing?" One half of class to take negative position and one half to argue the affirmative.

Day 3
Students re-read section, "From Desert to Snow-Capped Peaks," (page 30). Principal question to be discussed: to what degree does the physical environment determine the behavior of men? List specific physical factors and speculate about their possible influence on human behavior. How does physical isolation affect people and their development?

Day 4
Students re-read final section of the chapter, "Inca: A.D. 1400 - A.D. 1532," (page 41). What were the attributes and accomplishments which mark the Inca empire as a civilization? List of these characteristics to be noted on blackboard. How shall we procede to find the origins of this civilization? Class discussion in answer to this question.

Day 5
Students re-read sections on incipient agriculture and Early Formative period (pages 31-33). Review the effects of agriculture upon primitive culture. Review results of Agricultural Revolution in Mesopotamia. What effects of the Agricultural Revolution are apparent at Chavin de Huantar?

Days 6-7
Students re-read sections on Late Formative and Florescent periods (pages 33-39). Review role of technological change in the emergence of civilization based upon previous discussion in Mesopotamia chapter as well as new evidence from Peru. Is there any link between improved agriculture, increased population, and increased warfare? What is a political state? Is it necessary to a civilization? What are the differences between the three sites of the Florescent Period? What caused these differences?

Day 8

Students re-read sections on Expansionist period and Chimu (pages 39-40). Class discussion to make clear the differences between "ceremonial center" and "city." Does the absence of writing inhibit the rise of cities? Possibility for class debate or round-table discussion on the necessity of the city's existence if civilization is to emerge. How does Chan Chan compare with a large, American city and Lagash, Nippur or Uruk?

Day 9

Does a city or a nation or civilization as we know it carry within itself the seeds of its own destruction? Students could write a brief composition in answer to this question and the differing viewpoints could be read and discussed in class.

Day 10

Construct chart tracing emergence of Inca civilization. Earlier catagories accepted for use in Mesopotamia's case could still be used although stages or eras would be changed to correspond to terminology used in Peru chapter.

Chapter 5

Introduction. How to deal with four civilizations simultaneously.

When your classes have completed the first four chapters, they will probably be ready for a change of pace. The nature of the material itself will dictate a different approach to the remaining four civilizations. These four civilizations are distinctly different from the first two and from each other as well. However, students need to view them not only in terms of their differences but also to see what answers they provide to the three questions which are asked regarding all six of the civilizations:

1. What were the characteristics of each of the centers which contributed to the emergence of civilization?
2. What stages led to the result known as civilization?
3. What is civilization?

In other words, students should compare the processes in the development of these four civilizations with Mesopotamia and Peru.

Teachers have found two kinds of difficulties in proceeding from this point in the book. Some found that there was too much repetition if all the civilizations were presented in more or less the same manner. Others avoided that problem by emphasizing the differences among the civilizations but lost sight of the process of emergence. The desirable goal is to utilize the inherent appeal and uniqueness of the material, while at the same time enabling the students to ask the three questions so that finally all six of the emergent civilizations can be compared on the basis of the answers each provides.

That is not an easy task. The analyses of the four remaining civilizations which follow will help you deal with them, and ought to make it possible to avoid some of the difficulties. The suggestions are designed to:

1. exploit the inherent interest of the material
2. accomplish the objectives of the text
3. make effecient use of the limited time allowed for the entire unit

The material for the study of Egypt, the Indus Valley, China and Middle America is presented conscisely. You can read through the analyses and suggestions for each of the four in a short time. You will see that each is oriented toward the same main tasks. It is therefore possible to prepare yourself to deal with all four simultaneously. In general the four civilizations are dealt with in two ways: 1) the objective-questions, and 2) new problems or special situations. The latter would include discussion of diffusion of ideas, and the role of religion and military conquest in the emergence of civilization.

The accompanying outline of lesson plans has been prepared in a double-column so that the teacher can readily see how the nine days proposed for these four case studies will be used. Since this is the first time that all four case studies are being studied in this way, the teacher may see where obvious improvements and modifications can be made or where difficulties not anticipated by this writer will surely occur. At the end of each day's plan there is a more detailed discussion of some points which have been skimmed over briefly in the outline.

In order to assign Civilization "X" to each student, or in order to allow for some choice, the teachers might give a thumbnail sketch of each, including the unique problems posed by each, so that there is some basis for choice. For example, the problem of conflicting interpretation of the Indus Valley evidence may excite some students, but would frighten others away. Efforts to match the right student with the appropriate civilization will be worthwhile. A timid, dependent student would not be likely to thrive in the academic rough-and-tumble exhibited by Fairservice, Wheeler and Piggott. The teacher will need to exercise judgment about the final alignment of students and civilizations, being sure that all four cases are well discussed.

Suggested procedure for the third case study: Chapter "X"

Homework for Day 1	In class Day 1
Reading. Read Chapter "X" and be prepared to answer three questions when you come to class: 1) In what way does the civilization you have chosen as your third case study differ from precivilization in that area? 2) In what respects does the emergence of civilization in this case seem to be considerably different from the emergence of civilization in Mesopotamia and Peru? 3) What particular difficulties confront you and the archeologists in your joint attempt to uncover evidence which shows the emergence of civilization in this region?	One member from each of the four groups to write down his answer to the first question on the blackboard. Other members of each group to question this statement and add constructive criticisms. In second half of period teacher to guide discussion towards two ends: 1) to help all students see how these four cases of emergence are similar yet also different from Mesopotamia and Peru; 2) to help all students see similarities and differences between their 3rd case study and the 3rd case study of the other members of the class.

Comments and Suggestions, Day 1

The questions that are suggested for the first day's discussion should involve the entire class. The first one is less controversial than some of the later questions which will be discussed and ought to prove easier for the average student to answer.

Teachers should make clear from the outset of Chapter "X" that they expect all students to know thoroughly three case studies of emergence — Peru, Mesopotamia, and whatever their third choice may be. This should be the minimum requirement. Hopefully, some students will be able to do more because the material is of particular interest to them or they habitually listen with greater care to what other students say during class discussion. All students will be expected to work out for themselves answers to the three questions. The quality of their answers to these questions will be increased if they can consider the evidence from more than three case studies.

Much of the success of the two weeks which are planned for the study of these four emergent civilizations will depend upon the teacher's skillful balancing of individual reading with class discussion. This, of course, is true of every course in which "discussion" is a major learning device, but the problem remains acute because your students will be reading from four separate sources. They will have to be highly motivated in order to listen to other students talk about things which they know little about. You might refer them to the first chapter of the text and note how the archeologist needs the help of other men in order to find answers to his questions. Similarly, your China experts will need the help of those who are knowledgable about Egypt and Mesoamerica and The Indus Valley if everyone is to find a satisfactory answer to the question of emergence. In a letter Teilard de Chardin once wrote of the inspiration he felt when seeing scholars from all over the earth pursuing their common inquiry into man's origins. Perhaps this is too mature a feeling for 9th graders yet they ought to feel something close to this common pursuit of knowledge, and their corresponding obligations to each other.

Homework for Day 2	In class Day 2
Writing. Each student to complete chart showing stages of development which led to the emergence of the civilization which he has studied. Same catagories which were used in similar charts for Peru and Mesopotamia should be used but teacher may or may not give the class — depending upon their ability — the stages or eras into which the emergence may be logically divided.	Four civilization groups to meet separately. Teacher to spend ¼ of class period with each group, correcting factual errors and answering possible questions concerning pigeonholing of data. By end of class each group to have made appropriate revisions of their individual charts. One member of each group to volunteer or be chosen by the teacher to copy this information in such a form as can be made readily available to the entire class the following day.

Comments and Suggestions, Day 2

Four obvious points should be mentioned: 1)group work, unless under the immediate supervision of the teacher, has many hazards and may be especially harmful to the student who has not carefully prepared his homework.

2) The chart is meant to be a helpful device. If it seems to the student to be busy work its value is lost. Some students can prepare beautiful charts but not really understand what they are doing. The teacher ought to remind the class why the assignment is being made: to help them see graphically what lies contained in the text. The stripes on the football field help the football fan know how far his team is from a touchdown; the scarcity of population, crudeness of architecture, and absence of specialization ought to show the student how far his village-farm culture is from civilization.

3) The best chart is that which the student makes because of his own desire to see stages or levels of development. If the teacher supplies the catagories and the stages, the student will fill in the appropriate information in the appropriate blocks but he may lose sight of the significance or meaning of what he's doing. If the teacher has not helped the students to break down the data given in the text into cultural stages or historical periods in the chapters on Peru and Mesopotamia sufficient time ought to be spent now in so doing.

4) Whatever charts are prepared ought to be readily available to every member of the class. If it proves impossible for one reason or another to give every student in all of your classes three charts showing the stages in the emergence of civilization in the other three case studies, perhaps large charts made on art paper or even made on the blackboard could be used. The difficulty with the latter alternatives is that the students don't have them to study on their own.

Homework for Day 3

Chart-making or Reading.

1. Four students from every class to complete clean copy of chart showing emergence of their 3rd case study.
2. Everyone else to do supplementary reading assignment. Major aim: to obtain more detailed knowledge and more firm understanding of their case study.

In class Day 3

Charts showing stages of emergence of China, Indus, Egypt and Mesoamerica to be distributed in class. Two principal questions to be discussed:

1) Was the sequence of development the same in all four instances?
2) Was the rate (speed) of development the same in all four?

Comments and suggestions, Day 3

Students may need to be reminded at the beginning of the discussion that they are expected to be an expert as far as their third case study is concerned. They should also be reminded why they are studying a third civilization: to be more able to construct some form of general statement about the emergence of civilization which takes in not just one case study but three — and for your better students — all six cases of emergence. One desirable way of moving toward some generalization would be to start with the question: "Look at the sequence of emergence in the four case studies. What regularity or pattern in their emergence do you see?" The students will be able to see clearly that in the earliest stage there is in every case some kind of village-farm settlement and at the latest stage there is some form of a city. But there are many variations within this broad sequence.

Can the class explain the apparently strange sequence which is broadly similar but in detail so very different? Does the existence of characteristics peculiar to one civilization negate our attempt to find regularities in the emergence?

Once the students see that the sequence was broadly the same — in spite of very different physical environments — they might then look at the rate of development. They might not see the importance of the question. The teacher can simply say that it is another attempt to find regularities. If we discover that the pace was irregular between different civilizations and even within one area (as in Mexico and central America) we shall have to try to find an explanation.

Again, the quest is hindered by scarcity of evidence. But using what facts are now available a simple chart could illustrate the pace of development starting from the earliest village farming community to the first evidence of cities.

Approximate Number of Years from Village Farm to City

	Mesopotamia	Egypt	Indus Valley	China	Peru	Mesoamerica
7000 B.C.	Jarmo Jericho (7000)					
6000 B.C.	↓					
5000 B.C.	↓	Fayam (5000)	? no specific mention of village farm site in the text.			
4000 B.C.	↓	↓	↓			
3000 B.C.	Uruk (3400-3000)	Memphis (3200)	↓	Yang Shao Pan Shan Lung Shan (3000)		
2000 B.C.			Mohenjo-daro (2500)	↓	Huaca Prieta (2570-2370)	
1000 B.C.				Anyang (1500)	↓	Tehuacan (1800-1500) Chiapade Corzo (1500-1000)
0					↓	↓
1000 A.D.					Moche? (400)	Teotihuacan (900)
2000 A.D.					Chan Chan (1200)	
Approximate Number of Years from Earliest Village Farm to Earliest City	4000	1800		1500	3700	2400

What kind of a pattern emerges? The number of years from village-farm society to civilization varies from 1,500 years to 4,000 years. Even with the diffusion of important ideas from Mesopotamia to Egypt and China the emergence of civilization was a gradual process — surely imperceptible to the people of time. Does diffusion explain the difference between Egypt's and China's comparatively quicker emergence? Why was there no comparable diffusion from Peru to Mesoamerica? The teacher will have to remind the class that the subject of diffusion and the possibility that large-scale organized warfare may be another factor in the emergence of civilization are both important and will be discussed later, but that the principal aim of today's lesson is to compare the emergences and look for regularities in their development.

Homework for Day 4	In class Day 4
Writing. Use charts for all four case studies as basis for brief paragraph answers to each of the following questions: 1) Compare the level of development of village-farm culture in all four civilizations. What differences are apparent? 2) Compare the level of development in all four civilizations.	Discussion based upon student answers to the two principal questions assigned as homework. If time allows, Childe's criteria for the emergence of civilization in Mesopotamia could be compared with the evidence from the four case studies. What differences are evident? What are the similarities?

Comments and Suggestions, Day 4

The teacher might focus the attention of the class today on those two aspects of the emergence about which we have considerable information — the village farming communities and the cities.

How are the village farming settlements alike and how are they different? One obvious difference will be in the kinds of plants grown and the kinds of domestic animals present. Why are these differences significant? Those who have read the chapter on China may point out the need for greater community cooperation (if not centralization of authority) required in the growing of rice. The Mesoamerican experts may point out that the absence of draft animals will have widespread effects upon agricultural methods, especially upon the capacity of the inhabitants to practice extensive agriculture and thereby limit the amount of food surplus which otherwise could be accumulated. The same Mesoamerican sleuths might point out the abundance of foods which have a high carbohydrate content and the resourceful students might inquire from their science teachers or do independent reading to discover the effects of a low protein diet upon the energy level of an individual.

In all four case studies there is sufficient evidence to indicate a much greater concern for the dead who are regarded with increasing attention which can be measured by the improved quality of graves (which represent increased time and labor), and the interring of property with the bodies. The teacher might ask at this point if there is any important difference between these early attitudes towards the proper care of a dead person when compared with our own attitudes.

Comparisons between the cities of these emergent civilizations will likewise show tremendous diversity as well as certain common characteristics. In China and the Indus valley there are walled cities (if we accept for the moment the Wheeler-Piggott view); Teotihuacan and Harappa and Mohenjo-daro exhibit the work of some central city planning commission; in all four cities writing is evident and with this the necessary social divisions which make possible the existence of a class of scribes; the presence of many commodities not found in the neighborhood of the cities indicates widereaching trade in China, Egypt and the Indus. The Mesoamerican experts might be asked to make note of the specific differences and similarities between Tenochtitlan and Teotihuacan. In three cases out of four (Indus valley, Egypt and Mesoamerica) the impact of religion upon monumental architecture is apparent. An efficient sewer system is one of the startling remains of the Indus valley cities. Why would it be important for people living in a city? Is urban life possible without such a system?

Homework for Day 5

1. None required.
2. Teacher could use this time to give more direct help to weaker students and encourage better students to browse in library for relevant reading and illustrated material.
3. Some students might be willing and able to answer the following question: what appears to you to be the most striking or distinctive element of your case study? of the other three case studies?

In class Day 5

Slide-lecture-question period. Slides illustrating artifacts and sites. For commentary on the slides see Slide Guide.

Comments and suggestions, Day 5

Before the comparison of stages of emergence is completed your students should have the opportunity to see as many illustrations of their case study as possible. It would be valuable, in this context, to spend an entire day looking at the 35 mm. slides distributed by the Project. The comments contained in the guide to these slides ought to be made available to every student when the slides are shown so that they do not have to spend valuable time taking notes when they ought to be looking at the illustrations. It would be of great help if the time of an art teacher in your school could be procured for each class — or if you could combine all your sections for this one class and manage to have an art teacher present who might be able to explain some of the skills and complexities involved in the making of pottery without a potters wheel, or the bronze-casting process, etc. As mentioned earlier in this text, the student would profit much more from this slide lecture-question period experience if he himself has encountered some of these crafts in his art or shop classes.

The teacher ought to be cautioned against attempting to show too many slides too quickly in one brief class period. A variety of methods might be used to show a limited number of slides effectively. For example, the slides could be grouped according to type instead of according to civilization. There are enough illustrations of sculpture, pottery, architecture, bronze vessels, jewelry, and sites of ruins so that these slides could be grouped separately and comparisons and contrasts made between each one in addition to the usual identification process. Even here the students who are expert in their respective studies should be encouraged to identify and, wherever possible, state the significance of the illustration which is being shown. At any rate, the teacher ought not to tell his classroom of detectives that they are now going to see ten or eleven slides illustrating the emergence of civilization in the Indus valley. This announcement takes away most of the joy of discovering that one has guessed correctly the identification of a li bronze and permits the students to adopt a passive attitude. Other slides which illustrate feline and serpent motifs from different civilizations could be shown and the students might attempt to draw some inferences from this evidence.

Of course, the teacher ought not to overlook the potential within his own class: some fortunate few may have travelled to Egypt or to Mexico. They may have taken some 35mm. slides which are worthy of being seen and their own enthusiasm and first hand knowledge would help restore some life to these dusty relics of the past.

Once the student has seen with his own eyes and felt with his own hands copies of the artifacts of these four emergent civilizations, the teacher could then logically ask the subjective question: "What is there about your civilization which strikes you the most? which intrigues you the most? which makes you admire these people?

Homework for Day 6

Reading. Reread Chapter "X" (and supplementary reading if it has been assigned) looking for evidence of diffusion. If the teacher considers this assignment too general and likely to result in a poor discussion the following day, the questions to be the basis for the next day's discussion could be given to the students.

In class Day 6

Entire class to discuss the role of diffusion in the emergence process. Five main questions to be answered:

1) what is diffusion?
2) where was diffusion a factor in the emergence?
3) what was diffused?
4) where was it diffused from?
5) what was the effect of diffusion upon village-farming society?

Comments and Suggestions, Day 6

After the homework for the sixth day is assigned in class the teacher ought to reassure himself and his students that everyone knows what is meant by the vague term "diffusion." It simply means the transmission from one culture to another of ideas, values, techniques or material objects.

When representatives of every case study have been asked about the presence of diffusion in their area it will be apparent that the Mesoamerican experts will have nothing more to say. The teacher could then turn over the questioning to them and allow them to interrogate the other 3/4 of the class — perhaps in a "Meet the Press" type inquisition. In this way the students who have studies Egypt, China and the Indus will share their information and ideas about diffusion clearly enough so that their inquisitors are satisfied. The teacher could remain silent during this question and answer session. He might intervene towards the end of the period, gently tell the Mesoamerican students that they have overlooked some important questions — if this is the case — and ask further questions from the experts if necessary.

The greatest difficulty will probably occur in attempting to separate the effects of diffusion from the effects of military conquest and the subsequent political unification of Upper and Lower Egypt, the Indus valley and China. Perhaps the two topics cannot realistically be separated in the classroom. The teacher might have to admit this and simply say to the class that the two factors are closely interwoven, that they have been separated for discussion purposes and homework purposes, and that tomorrow we will focus on the role of war.

There are other aspects about diffusion which could be discussed if time permitted. How can it be explained that Mesopotamia was the source of such great diffusion and Peru seems to have been the source of none? Aside from the diffusion which occurred via the conquest of one people by another, how else did diffusion occur? Is diffusion still happening? What examples can the class give of diffusion from Western Germany or Great Britain to the United States since 1945? (The writer is thinking of the VW and the Beatles.) Is there any evidence that diffusion via peaceful trade is further-reaching or longer-lasting in its effects than diffusion via war?

Homework for Day 7	In class Day 7
Reading and writing. Reread Chapter X (and supplementary reading material) and write a brief answer— no more than one page— to the following question: To what degree did organized warfare accelerate the emergence of civilization?	Discussion to center round the role of war— particularly the effect of military conquest and subsequent political unification of village-farm cultures.

Comments and suggestions, Day 7

In the homework for the sixth day the teacher made clear what was meant by "diffusion" before the students left the classroom. For the seventh day however, it might be interesting if the students were to work out for themselves the meaning of the phrase "organized warfare."

Perhaps the students should first consider what we mean by the term "war." If one man attacks another or members of one clan carry on a vendetta against another we don't usually use the term "war" to describe this level of conflict. Certain Indian tribes in North America did wage war against other tribes. How was this type of war different from that in Egypt or Middle America or China? Perhaps organized warfare differs from previous forms of hostilities in that: 1) it involved larger numbers of men; 2) the army was made up on conscripts rather than volunteers or mercenaries; 3) the victor occupied the territory of the people who were conquered; 4) the entire population of the defeated city or country were either executed or became slaves. This list does not claim to be definitive. It is simply intended to indicate some of the ways in which the nature of war has changed as man's culture has changed. Certainly it does seem that organized warfare tended to last longer than other kinds of armed conflict, that it was more destructive and its effects more permanent. To what degree did these new military practices accelerate the emergence of civilization? Our answer to this question could be divided into two parts.

In earlier times it would not be of any particular benefit for one small village to conquer another village because the land's productivity would not be increased as a result. But during the time which saw the rise of towns and cities it would be possible for the leaders of one city to increase their power, their wealth and their prestige by conquering a prosperous neighboring city. Simply stated this means that organized warfare became a method — hazardous to be sure — but a risk which bold men might be willing to take in order to extend their power and glory.

If victorious in war, there would be no reason for the leader and his followers to relinquish power. They could use the same machinery which had proved effective in winning the war as a means of preserving their authority. If a group of individuals had sufficient power to raise a conscript army might they not also be able to maintain, for example via the corvée system, a labor force which could be used to build large-scale irrigation systems, roads, dikes, fortifications and all the other large-scale projects which are one of the indices of a civilization? With the surplus wealth acquired by force through warfare (see the statement earlier in the Handbook about the booty acquired by Upper Egypt after their conquest of a portion of the Nile delta) were not men like Narmer now able to subsidize the arts on a lavish scale, promote foreign trade, and honor the gods (and themselves) in a magnificant fashion? To the extent that organized warfare created sharper social and economic distinctions among men and promoted the growth of a leisure class it can be said to have accelerated the emergence of civilization.

Secondly, it also seems apparent that the emergence was accelerated not only by the victors but by a general fear of war, or at least the recognition that war was a likely possibility. Certainly in modern times the powerful fear of foreign attack has acted as a great spur to action promoting individual self-sacrifice, fostering cooperation between all ranks within a society, and creating feverish economic activity. In modern times this more rapid pace of economic activity increased wealth and thereby increased leisure — for some individuals. Do we have any reason to doubt that the same kind of thing happened, on a much smaller scale, in the nascent towns of Mesoamerica, The Indus valley and China?

Homework for Day 8

Students to study Chapter X (and supplementary reading material) looking for the role of religion in the emergence of civilization.

In class Day 8

Discussion of role of religion should lead to several conclusions:

1) In the case of China, religious needs seem to have been a major spur to the development of writing (although the idea may have come from the West and the destruction of all writing materials except the inscriptions on bones may distort the importance of religion).
2) Organized religion became a tool through which a small group of men could control an entire nation — as with the Maya, in Egypt, and possibly in the Indus valley.
3) As a series of beliefs and values it acted as a common denominator, holding all members of society together irrespective of their wealth or station. In this way religion increased the scope and strength of a man's loyalties so that he was now a part of a larger unit than before.

Comments and suggestions, Day 8

The discussion of the role of religion in the emergence of civilization ought to center about two questions: 1)What evidence do we have for religious activity during this period of emergence in each of the four case studies? 2) In what way did these activities, considered individually or as a whole, promote the emergence?

Let us take two specific archeological finds — one in the Indus valley and one in the Nile valley and see how they may have promoted the emergence. The Great Bath at Harappa seems to be connected with religious ritual associated with cleansing and purification. The significnace of this ritual as a religious rite does not concern us. The existence of the building however does tell us something about their architecture, the fact that there must have been sufficient labor and other resources available for its construction, and that the people of this culture desired — or at least acquiesced to their leaders' desire to build this structure. Similarly in Egypt the existence of the pharaoh's pyramids as an example of their religious beliefs and ritual does not concern us here. These are in the province of the historian of religion. We are concerned with the way in which these beliefs may have promoted the rise of civilization. We can see that incredible feats were accomplished in order to build the pyramids: Thousands of men were freed from agricultural pursuits; copper mines were developed in Sinai in order to have a greater supply of copper tools; ships ventured across the eastern Mediterranean to obtain timber from Byblos so that other ships could be built to carry the limestone from quarriers in Upper Egypt down the Nile; painters, sculptors, goldsmiths, weavers all found life-time occupations in The Pharoah's employment and worked to glorify his name in this world and the next. Perhaps in these two examples can be seen some of the creative forces which organized religion expressed, thereby promoting the emergence of civilization.

Homework for Day 9

Students speculate about how to explain the emergence in the areas they studied, or in all six areas, and write down the evidence they find in the book to support their speculation.

In class Day 9

A one day discussion in which:

1) all points of view (with supporting reasons) are heard
2) students question each other's viewpoints and weigh quality of supporting evidence
3) class gradually arrives (hopefully) at two or three distinctly different interpretations.
4) teacher acts as arbiter and inquisitor but makes no attempt to establish "the right answer."
5) every student to know what are the main views held within the class and the different reasons in support of each view.

Teacher to remind class that this same problem — how can we explain the emergence of civilization — has perplexed many men for at least a century. A century ago some thinkers were quite certain that they had found an adequate explanation for this phenomenon.

See Guide Chapter 6

Case Study: Egypt

It is one of the more interesting paradoxes of archeology and perhaps all branches of knowledge that research yields more questions than answers. Such is the case with Egypt where more excavation has been done than anywhere else in the world in the past seventy five years yet many basic questions concerned with the emergence of Egyptian civilization remain unanswered.

The student will first encounter some obvious differences and similarities between Egypt's physical environment and that of Mesopotamia and Peru. It is a river valley where life is absolutely dependent upon the water of the Nile. There are no hilly flanks or nearby plateaus where it is possible to live a nomadic way of life tending sheep and goats and practicing subsistence agriculture but these same barren surroundings also act as a natural barrier against enemies from without. Within the valley itself the fertile soil and hot sun promised two or three crops per year if men knew when the river would flood and could control the flooding. The prospect of a bountiful harvest and a full stomach was a powerful lure and many were willing to surrender ancient customs in order to secure these benefits.

Irrigation was necessary for river valley life but the form of irrigation varied, depending upon whether one lived in southern or northern Egypt. In both instances the task was a difficult one and involved not only cooperation — which was also true of rice farming — but also intelligent leadership for without it the cooperation and the good intentions of all might be too late or too little. Agriculture and small-scale irrigation existed all along the Nile, from the First Cataract [CK the MAP] to the Mediterranean Sea. There is no indication in the text that the *idea* of agriculture was diffused from Mesopotamia to Egypt as we suspect was the case with China.

In all of these matters — physical environment, type of agriculture and the role of irrigation — the student faces no great obstacles to his understanding. The same cannot be said of the Geresean period, 3600-3200 B.C.

During this period two momentous developments occur: a quickening of life throughout the valley — in economic activity, in art, in technology, to name only three areas — and the military conquest by Upper Egypt of the delta region (Lower Egypt). How can these events be explained and what is their significance to our study of the emergence of civilization?

The students who are reading Egypt as their case study should first note that the cause of this quickening of life is attributed by the author to Egyptian contact with Mesopotamia. The precise nature of this contact is uncertain but the author cites the suggestion of Cyril Aldred that the contact may have been of a peaceful nature via trade through the port of Byblos in Phoenicia. But the distance from the delta to Byblos is between 300 and 400 miles.

Six specific influences are mentioned in the text: (1) the idea of writing, 2) techniques of copper working, 3) use of bricks for tombs, temples and palaces, 4) innovations in architectural style — buttresses and recessed panelling 5) the cylinder seal 6) art motifs. How does this list compare to that list which the Shang introduced into China? If we break down this diffusion into parts we can see that it consists of three major elements — ideas (the idea of writing), techniques (architectural styles in buttressing, use of bricks in building construction, copper working, art motifs), and material objects (cylinder seal). Of these three catagories, which was to be the most significant? Perhaps the best arguments can be put forward for writing. In time it would become a device through which men could express their thoughts and pass from generation to generation the knowledge of their discoveries. But in the beginning it was perhaps the Pharaoh's most powerful weapon in the effective control of a unified but rebellious nation. Would the Pharaohs have been able to rule as effectively as they did for as long as they did (1st - 6th Dynasties, 3200-2200 B.C.) without the help of writing? This does not mean that writing was the only factor or the most crucial factor which made possible their long ascendancy but it, along with others, was undoubtedly of great value.

Parallel to the introduction of important ideas and innovations from Mesopotamia was the growing centralization of authority throughout the river valley. In every example of emergence in this book the village farm way of life is represented as peaceful, i.e., the absence of fortified walls or even offensive weapons leads us to conclude that men were at peace with other men. If this is true, it is also illusory, for it implies something very close to Rousseau's "state of nature" where all men were good. But we have no evidence to indicate that the basic nature of men changed sometime between the beginning of agriculture and the beginning of civilization. The facts seem to indicate that man was at war with nature in the village farming way of life. The life was precarious and there was little time to contemplate or carry out an attack upon a very distant neighbor. Gradually, the conditions of living improved. Men gained ascendency over some of the natural forces around them and acquired a surplus of food. This allowed certain men to specialize in some crafts; some fashioned pots and others harvested grain and flax; some men became soldiers; others could now spend a great deal of time making weapons to attack other, wealthier villages or towns. Thus it is one of the ironies of the emregence of civilization that war is a luxury which only the affluent society can afford. Under the powerful leadership of Upper Egypt war became a profitable industry, more destructive than the copper and gold and linen industries, to be sure, but also more lucrative: Narmer's conquest of a portion of the Delta increased the gross national income of Upper Egypt by 120,000 prisoners, 400,000 oxen and 1,422,000 goats. (Walter B. Emery, Archaic Egypt, Penguin Books, Baltimore, 1961, pp. 38-40.) There is no intention here of indicting the leaders of Upper Egypt for crimes committed against Lower Egypt but simply to recognize the existence of a power struggle for what it was.

It should also be made clear that these wars of conquest did not occur as a by-product of the new influences received from Mesopotamia. None of these innovations or influences directly affected the basis of the agricultural system; it was the recurring annual surplus which increased the population, increased specialization and increased wealth. The new wealth in the Nile valley was attributable to an increasingly effecient and productive agricultural system. A number of farsighted and bold individuals realized that even greater personal wealth and personal power would accrue to whoever could dominate the entire valley and the delta. Was was the most direct means towards the desired goal.

At first glance it does not seem that warfare itself was a crucial factor in the final blossoming of Egyptian civilization. Because the military unification occurred almost simultaneously with the emergence of civilization there exists the possibility of saying that war was the final keystone in the emergence. War did not cause the final emergence of Egyptian society into civilization but the effect of the war — political unification — made possible the acquisition of greater wealth by fewer individuals who could use this wealth for whatever ends they saw fit — the promotion of art, the encouragement of a merchant marine and trade, the building of splendid palaces and monumental pyramids. An English essayist has expressed the matter this way: "Civilization requires the existence of a leisured class, and a leisured class requires the existence of slaves — of people, I mean, who give some part of their surplus time and energy to the support of others." (Clive Bell, "How to Make a Civilization", p. 424, Modern Essays edited by Russel Nye, Scott Foresman, Chicago, 1953.) War and the subsequent political unification did bring into existence a powerful leisured class who maintained their authority and leadership and privileges for a thousands years. Civilization might have come into existence without the unification of the entire valley. But the energy and ambition of the leaders of Upper Egypt have made it an academic question.

Your Egyptian students will probably be very surprised to discover, if they read carefully, that the evidence for the conquest of Lower Egypt by Upper Egypt rests largely upon the existence of two artifacts, the Narmer palette and a macehead. If they are curious and independent-minded they will want to know how archeologists are able to reconstruct such broad generalizations from so little evidence.

Simultaneous with the political union of the entire valley came the victor's claim to be a god of all Egypt. The phenomena is not unique to Egypt. Alexander and Augustine likewise sought to gain the obedience of their subjects through religion if they were not altogether successful in winning their political loyalty. But we need not look at the situation with modern skepticism. Earlier in the book the author notes that every village was under the protection of a deity. As the villages gradually came under the control of the most powerful town old deities would be cast aside in the face of the obvious power of the victor's gods in much the same manner that Constantine's conversion to Christianity followed from military success.

As a god the Pharoah was invested with godlike attributes and was responsible to the gods — not man — for his actions. Similarly, the members of his family who were appointed to high government position likewise shared his divinity. To some students this will seem to be nepotism on a magnificent scale. If they are of a critical mind, they will note that whatever justice was meted out was the victor's version of justice, not some abstract idea arrived at by years of careful thought and study about what is right. Their arguments may be valed. Nevertheless, the Pharaoh and the priests who supported his claim to divinity did perform many services for the good of the people of the state. The Pharaoh and his staff would not have referred to these activities as "services" or "responsibilities." They would probably have regarded these tasks as duties, which they, in their goodness, performed for all. What exactly did the priests do which helped maintain the peace and promote the general walfare and made them so powerful that by the Sixth Dynasty they were, in some respects at least, powerful enough to extract certain privileges from the Pharaoh?

> Close to the marketplace was a temple, and the priests of the temple supervised the operation of the market. They settled disputes, kept copies of agreements, and acted as bankers. And the keepers of the temple were helpful in other ways. They had learned how to predict with certainty the time of the coming of the Nile floodwaters. They had found that the length of the year was 365¼ days and had used the fact in making a calendar. They had built a plan for measuring distances and land areas, one of the simplest that has ever been invented. They had designed market baskets and jars of standard sizes. They had perfected a balance that could be used in the market, with a simple system of weights to

> use with it. And they had set up a school to give training in the handling of such things; those in charge of the school were giving courses in surveying, bookkeeping, business law, personnel management, architecture, history, and medicine as early as 2500 B.C.
>
> But an important accomplishment of the temple-school was not mentioned in our listing of courses. At some early time a writing plan had been invented, and this manner of writing had been used to keep temple records. As new uses were found for writing, the temple had set up a special branch of its school for the training of scribes in reading, writing and simple calculations.*

Approximately the second half of the chapter (pages 11-21) is devoted to a discussion of other important aspects of civilization during the life of the Old Kingdom (Dynasties I-VI, 3200 - 2175 B.C.) Within this section there are a number of points which should lead to considerable discussion in your class.

The section entitled "The Royal City — or Was It a City?" ought to form a question for the entire class to disucss. Are there different kinds of cities? If so, are there some characteristics which every place has to have in order to qualify as a city? If so, what characteristics can they list? In connection with this discussion it would be most valuable for everyone to read Robert Adam's article in the October, 1963 issue of the Scientific American entitled, "The Origin of Cities." Perhaps some students would volunteer to read another Scientific American article, "The Form of Cities," illustrated, with maps, April 1954, pp. 54-63.

The description of the Pharaoh's administration and revenue system is clearly written and many comparisons could be made between Egyptian bureaucracy and our own. What, for example, are the American equivalents to the "Royal Sealbearer" (who controlled traffic along the Nile) and the "Master of Largesse"? What is our equivalent to the corvée system? How are our taxes paid and how does our method differ from that of the Old Kingdom?

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*Keith Gordon Irwin, The Romance of Writing, The Viking Press, New York, 1956 pp. 13-14.

The brief discussion of social status in the Old Kingdom can be compared with the information in the chapters in Peru and Mesopotamia and compared again with the students' knowledge of American society. The slightly unctuous quality of the architect Nekhebu's statement about his rise in the world will be appreciated because it is the testimony of a man talking to us from the past, not just an artifact which has to be interpreted by someone else.

CASE STUDY: INDUS VALLEY

The Indus Valley provides a gold mine for the speculators in your classes. Interpretation of the evidence is so hotly contested among the experts that at the worst points of strain, two authoritative opinions are presented in the text. This civilization presents even more uncertainty than the others, and would probably be overwhelming to timid, dependent students. The argumentative ones, however, will have a field day. The two points of view are represented in the opposition between Fairservice, an American archeologist, and the British archeologists, Wheeler and Piggot. They differ mainly on these points of interpretation:

1 role of conquest role of religion	At the pre-civilized sites, Wheeler and Piggot say the plateau dwellers conquered the people of the river valley, leaping forward into civilization. Fairservice says the sites gradually emerged into civilization were religious and peaceful with no evidence of conquest.
2 what was the way of life	At the cities, Wheeler and Piggot say certain formations of houses indicate a regimented peasant army. They interpret other evidence as the remains of defensive walls, ammunition, headquarters of government. But Fairservice interprets the same remains as evidence of an essentially peaceful and religious community, and says our pre-conditioning to European ways of life cause us to read the evidence incorrectly.
3 causes of collapse	Wheeler and Piggot say the civilization died as a result of invasion. But Fairservice disagrees,suggesting that the balance between the food supply, the religious demands, and the population had become upset through natural development.

If you are fortunate, further discoveries will be announced while you are studying this unit. However, it is clear that the disputes will continue for a long time, and you can afford to allow your students to commit themselves as deeply as they wish to either point of view. You might wish to make available to them additional readings by the two sets of archeologists. You will also want to have them answer questions such as: do the two different interpretations lead us to significantly different conclusions in regard to the process of emergence.

The diffusion of ideas and inventions from Mesopotamia into the Indus Valley seems to be agreed upon by most authorities. The influence of Mesopotamia upon the Indus Valley people was probably made easier because of the similarities in physical environments, and therefore in the plants and animals available for domestication. The distinction between the diffusion of writing and the diffusion of the idea of writing is seen clearly in the differences between the respective scripts produced by the two civilizations.

Because of the scarcity of evidence, it cannot be determined if military conquest and strong leadership played a significant role in the development of the Indus civilization--as it certainly did in some of the other emergent civilizations. In the opinions of Piggott and Wheeler of course it did. The role of religion as an important factor in the development of civilization seems to be quite clear. Even Fairservice, Wheeler and Piggot agree that certain of the buildings found at Harappa and Mohenjo-daro are temples, that there were priests, ritual bathing, and probably sacrifices. Although some would say that Fairservice puts unwarranted emphasis upon the importance of religion in the emergence of civilization, it is worth noting that it is a common factor among all the civilizations. When men gathered together in villages, towns and then cities, their household deities were replaced by more far-reaching gods, and attended by priests. They were probably trying to find answers to some of the same questions which remain unanswered today.

Why, the text asks, did this civilization, with its indoor latrines and drainage systems, collapse? It is an intriguing question, but no answer is provided. Your guess, or your students' guesses at this time might be just as valid as Fairservice's, Wheeler's or Piggott's. Both invasion and imbalance seem to have been among the causes of the downfall of other civilizations, and either or both might have been a factor in the Indus Valley. When this is discussed in your classes, you will probably find uneasiness and confusion among the students, who would prefer to have a clear-cut answer. You might reassure them to some extent by pointing out that experts don't know the answers either yet. And that similar uncertainty exists in regard to the end of some of the Middle American civilizations as well. The importance of evidence and its interpretation are certainly clearly established, and it may be possible to encourage students to discuss those elements with the question:

> what would we need to know and how might we go about finding out about it, in order to determine the cause of the collapse of the civilization of Mohenjo-daro and Harappa?

CASE STUDY: CHINA

Before your students make a choice about which civilization they would prefer to study as a third case history, you might present something like the following as a thumbnail sketch of China.

Chinese civilization was the last of the Old World civilizations to evolve. Like the Indus Valley and Mesoamerica, and unlike Egypt, the archeological record for the early periods is sparse. It is a civilization which arose in proximity to but was not dependent upon the water of a great river valley system for irrigation. Those who are interested in art history may be excited by the developments in bronze casting which are found in this civilization. Those who are interested by the continual contrast offered by the city and the country, between the "simple life" of the countryman and the sophisticated life of the city slicker may be intrigued by the evidence presented in this chapter. Two of the chief forms of recreation among the Chinese upper class were hunting and fighting; you may be able to make some good comparisons between past and present forms of recreation. The Chinese had writing but they didn't write on clay or stone or papyrus. What did they use as a writing material and what kind of things did they say? They honored and worshipped the spirits of their departed ancestors. Why? If you are interested in these questions, choose China for your third case-study.

There may be just enough fascinating and puzzling material in this chapter to whet the intellectual appetite of some of your students sufficiently so that they might embark upon a private and extra-curricular study of Chinese civilization.

The teacher's comments upon the chapter ought to promote curiosity. But the teacher should be aware that the chapter contains a number of problems which may baffle the student and discourage him from any further enquiry. Two thirds of the chapter is devoted to commentary upon the fully emerged Chinese civilization which is evident at Anyang, capital city of the Shang dynastry from 1500-1027 B.C. This emphasis upon the civilization itself rather than the process of emergence may promote a further curiosity about later developments in Chinese civilization but it will first cause confusion. The confusion will exist because the process of emergency in China is very different from its emergence in Peru and Mesopotamia. Of course, this is why a third case study was required, and the student should be asked to point out exactly in what ways the process was different.

On the second page of the chapter, the author notes the appearance of the idea of agriculture via "stimulus diffusion" from Mesopotamia and quotes Fairservis' definition of the term. Later, on the same page, the author points out the existence of a time-gap in the archeological record of China, and on the fifth page he specifically notes the introduction into China by the people who conquered the Lung Shan three important ideas which these invaders had inherited from the civilizations to the west: writing, bronze-making, the wheel. Since diffusion is such a vague and all-inclusive word, it may be meaningless unless it is clearly understood and somewhat restricted in its meaning. Some discussion of its meaning might be worthwhile at this point--remembering that it does play a significant role in Egypt and the Indus Valley as well as China.

Diffusion takes place because man is an imitative as well as a creative being. The word itself simply means "spreading" or "dissemination." It stems from the Latin verb, diffundere, "to pour in different directions." Anything can be diffused: an idea, a value, a technique, a material object. Things can be diffused accidentally or intentionally, by one man, a small group or an entire society. Diffusion occurs when one may or a group of men--large or small--accepts and practices some new idea which has been received from some other culture.

The impact or significance of the diffusion may depend largely upon the status and power of the people who accept the new idea, value or technique, but the significance may also depend upon the inherent revolutionary aspects of the idea itself. Thus, the forms of diffusion are almost limitless. Let's consider some examples.

A material object--a simple plant or animal can be diffused through man's actions. Spanish conquistadores brought hundreds of horses with them to the New World. Many escaped, prospered in their new environment, greatly increased in numbers and some were eventually brought under the control of Indians who used them in their hunting for buffalo. The Spanish discovered a strange new food, then unknown in Europe--the potato plant already being cultivated in Peru, took some plants back to Europe where its cultivation spread and the potato finally rivalled bread as the poor man's basic food. But a plant or an animal doesn't have to move 3,000 ro 4,000 miles in order to have diffusion take place. English colonists in New England and Virginia observed their Indian neighbors cultivating Indian corn and tobacco. After some initial doubts about the worth of these unknown foods, the English came to accept their value and practice their cultivation.

Techniques have been imitated for thousands of years. Methods of fashioning stone to create tools spread throughout the entire earth in a slower but perhaps more thorough manner than fashions in women's dress move from Italy and France to other parts of the world today. Techniques may be diffused by a small group of European or American engineers teaching Asian or African engineers how to construct a steel plant, how to build a dam, how to build a railroad. Techniques also can be diffused by one man--like Samuel Slater who memorized the construction of machinery in the textile mill where he worked in England and then moved to New England carrying with him all the secrets which the English government had tried to contain on her small island.

Techniques are difficult to keep secret, and ideas do not recognize political frontiers. The major religions of the world today owe their existence to diffusion through the collective energy of many individuals. As in religion, so also in politics and economics, the ideas of democracy, socialism, capitalism, communism have been diffused by force and persuasion from generation to generation, from culture to culture.

An idea or technique may be diffused from one place to another but the society which picks up the new idea or technique may completely change the expression of this idea. The Indians of Virginia grew tobacco but they didn't have a tobacco industry or a tobacco lobby. American politicians after the Revolutionary War attempted to apply to a wilderness society republican ideas suitable to ancient Greek city states.

Diffusion creates as well as destroys. The important ideas and techniques which the Shang brought with them into China destroyed, at least in part, some of the village farm ways of living just as effectively as the advent of the industrial revolution has destroyed the village farm economy of much of Africa in the 20th century.

Diffusion then, occurs for many reasons and with varying degrees of complexity. A man may intentionally want to carry some idea from one culture to another with the purpose of changing an aspect of that culture--as with Paul's mission to the Gentiles. A man may simply appreciate other ways and this outside influence will be apparent in his work--as Whistler and Picasso were influenced by Japanese and primitive art styles respectively. Sometimes the diffusion is accidental, as with the horses who escaped from Cortes, and sometimes intentional as with the potato. A group of individuals with new ideas may effect the entire course of another people's history through their example or by persuasion or by force--the role of German immigrants in American politics following the abortive revolutions of 1848 is one example, and the American military occupation and indoctrination of the Japanese people after 1945 is another. Fairservis' term "stimulus diffusion" simply seems to be an inter-national or inter-cultural form of "keeping up with the Jones'" and a good current example might be the impact of Sputnik I upon the American exploration of outer space.

You could ask your students to give examples of ideas, values, techniques and material objects which have been diffused and are now believed or used in our country. They could also be asked to say how, i.e., by what methods, these ideas, values, etc., were diffused and what is their effect upon our society. A chart to illustrate this might look something like the following:

Idea, Value, Technique, material object	Method of Diffusion	Effect upon Our Society
1 rounders (an English baseball game for girls)	1 via Abner Doubleday and others	1 the national pasttime a mass entertainment sport
2 Olympic Games	2 (assign some boy in your class to find out)	2 another form of competition with the Soviet Union
3 eye shadow	3 2,000 years of women's fashion and movies like "Cleopatra"	3
4 bicameral legislature	4 imitation of English Parliament by American political leaders during the Revolution	4 an institution which slows down but perhaps improves the quality of legislation passed by Congress.

(THERE IS A WONDERFUL EXAMPLE OF DIFFUSION WHICH WAS PRINTED IN THE NEWSPAPERS IN CONNECTION WITH SOME UNITED NATIONS FUNCTION--TRY TO FIND . . .)

The student may be troubled by the incompleteness of the picture of life at the Shang capital. There will be cause for his irritation. A broad view of Shang civilization is hindered by the archeologists' preoccupation--and fascination--with the royal tombs which have been found at Anyang. Fairservis has expressed the same view in a slightly more urbane fashion:

> Probably one of the most unsatisfactory aspects of the reports so far issued by the excavators is the continued emphasis on the tombs and apparently far less concentration on the city itself. The interpretations of the Shang tend to stress its artistic and ceremonial aspects rather than to increase our knowledge of life in the late second millenium B.C. (The Origins of Oriental Civ., Mentor, 1959, pp. 119-120.)

Nevertheless, we are able to obtain, if not a clear view of the whole society, at least some insights into the life of the upper class at Anyang. How is their life compared with that of the rulers in Mesopotamia? What were the questions which they asked of their gods? The student might compare the reasons given in the text for the uses of writing in both Mesopotamia and China--in the one instance it seems to arise from accountacy needs and in the other an equally material but perhaps more personal desire to know the will of the gods.

Map study would be helpful if the students are to understand the significance of the statements in the text about diffusion. It is not enough to recognize location. The student ought to compare topography and climate maps and speculate about what would be the easiest route--for men on foot or people on horses--to move from Mesopotamia to the Hueng Ho valley. And since there is no evidence that there was an actual migration of people from Mesopotamia to China taking these crucial ideas with them the student should know what parts of the area in between the two civilizations have sufficient rainfall and grassland to sustain a nomadic population. Is it inconceivable that the wheeled chariots which are found both at Ur and Anyang were used as weapons by the people who invaded the Lung Shan and Yang Shao culture areas of China?

CASE STUDY: MIDDLE AMERICA

Students will probably notice that the physical environment of Middle America, like that of Peru presents striking contrasts. Here is another opportunity to see that early civilizations emerged in what seem to us to be inhospitable areas as well as in "friendly" physical environments. It might be worthwhile to ask the students what is meant by those two terms. They ought to recognize that a friendly environment isn't necessarily one that is most comfortable for human beings. The midwest of the United States is a good example. The days and nights of humid, very hot weather are essential in making the region the corn capital of the world, but people don't enjoy the climate.

Students also ought to note that people respond to many stimulii as they travel through time. The physical environment is only one of several factors which affects the conditions of their lives. Sometimes humans have learned to outwit the most perverse physical conditions through their responses to other stimulii--as the Maya did in establishing ceremonial centers in the Yucantan jungles. But on the other hand, there are examples of people living in virtual Gardens of Eden who have not figured out the relationship between seeds and soil.

At this point your students should be trying to see the conditions under which civilization did emerge in Middle America, and to find indications of:

1. Stages through which that civilization did develop.
2. Characteristics of those stages.

In reading about Middle America, students will need to be in steady contact with the map of the area. Attention will be focused mostly in two very different regions: the Central Highlands of Mexico, and the jungles of the Yucatan. However, one of the first sites mentioned in the text, Chiapa de Corzo, is in neither of these places. It is mentioned because it has the distinction of being the oldest known village farming site in Middle America. If there are similar sites in the southern jungle area, they have not yet been discovered. This earliest site may not have advanced beyond mere clan or kinship grouping, as is suggested by the presence of household, rather than village dieties. The limited use of agriculture was necessarily supplemented by hunting and fishing, as is suggested by the location of the village.

The second site, Tlatilco, which is in the Valley of Mexico, is a more highly developed culture, and could probably be designated as a town. One of the mysteries of Middle America is how the Tlatilco people, living 7,000 feet up in the mountain valley happened to produce pottery figurines of monkeys, and animal common to the southern jungle areas, but not to the central highlands. The evidence seems to suggest that the Tlatilco people were in contact with the enigmatic Olmec of the lowlands. Not much is known about the Olmec, but they seem to have engaged in long distance trade. Some archeologists insist that they had developed a civilization in the Yucatan jungles, which extended for awhile, at least, up into the central highlands--an explanation for the presence of Olmec motifs in the Tlatilco village and elsewhere. There does seem to be some agreement among authorities that some of the Olmec patterns of life, established as early as 1000 B.C., have influenced development throughout Middle America. It seems to be clearly evident in the material from Tlatilco.

While Chiapa de Corzo and Tlatilco may be viewed as examples of a farming village and a town, respectively, the sites of Chupicuaro and Monte Alban, seem to represent a transition period between the pre-civilized and the Classic Age.

Three examples of the Classic Age civilization are presented: the Maya in the Yucatan jungle, the Teotihuacan in the Valley of Mexico, and Monte Alban, in the Valley of Oaxaca. In addition to the chart and other work suggested in the introduction to this chapter, your students will need to locate these three sites on their map. They ought to notice where these are in relation to the earlier sites mentioned, and if they are a speculative group, they might look for lines of continuity.

Looking at the Mayan civilization which miraculously emerged from the tangled jungle, your students might ask questions such as:

1. Can the ceremonial centers be considered cities, since the people did not live in them?
2. How could a ball game be considered a sacred or religious activity?

Of course they will also examine the Maya in terms of its development and achievement. Careful searching for indications of stages and characteristics will aid in the compilation of the chart.

Teotihuacan, near the site of modern Mexico City, was, without question a well-planned and well-executed city. There seems to be some dispute among scholars in regard to the extent of its influence. There is agreement upon the fact that the people of Teotihuacan did achieve a civilization.

The third civilization, at Monk Alban, developed during the same period as the first two. It was similar to the Maya in many ways, but may be most noted for its ceremonial center was carved out of the rocky ledge.

Though there is no suggestion of diffusion in the text, Coe presents the distinct possibility of an early relationship between Peru and Middle America:

> There was great excitement in archeological circles when the Tlatilco complex came to light, for something resembling it was already known elsewhere--thousands of miles to the south in Peru. There also . . . in the Chavin culture (c. 800-300 B.C.) were found such odd pottery shapes as stirrup-spouts . . . associated with unusual techniques . . . and figurines of Mexican appearance. A chance resemblance or not? When two complexes, consisting of more than isolated traits, are so close . . . it cannot be a matter of mere chance.

Many scholars do not agree with Coe's interpretation, but it is worth considering. Some seemingly outlandish theories of the past have ultimately proved to be at least partly correct. If you read this excerpt to your students you have them compare the two periods, they should notice that communication between Peru and Middle America in pre-civilized times is not the same as the diffusion of ideas from a civilization to a pre-civilized society.

As in Peru, military conquest was an important element in the development of the cultures and civilization of Middle America. It is interesting to note that warfare does not seem to have been important until after the Classic period. You might ask your students to compare that with the development in Peru: At what stage did extensive warfare or conquest become evident in Peru? Archeologists do not know what caused the decline of the Classic civilizations after A.D. 900. Some say it may have been a result of a combination of agricultural collapse through drought and the pressure of the outer barbarians who were knocking at the gate of civilized Mexico. In any event, the Toltecs and then the Aztecs replaced the Classic Age civilizations. The lack of knowledge concerning the decline of the Classic age civilizations resembles the lack of information about the decline of the Indus Valley civilization, and the two might be compared by your students. The rise of the Toltecs and then of the Aztecs is, of course, another example of far-reaching military conquest and control, possibly comparable to the Incas in Peru. Certainly some students will feel a literary imperative to compare and analyze the ultimate conquest by a handful of Spanish soldiers in each case.

There are many points which might be compared between the emergence of civilization in Peru and in Middle America. Your students ought to notice:

1. Contrast in physical environment within the area.
2. Conquest by aggressive "local" groups.
3. Appearance of felines in religious art.
4. Appearance of similar art forms, such as stirrup spout pottery and dualistic figurines.
5. Early cultivation of maize.
6. Lack of draft animals.

7. Ultimate conquest by small band of Spaniards.

Not comparable is writing--Middle America developed it early and used it extensively, while Peru never went further than the use of the quipu. The early appearance of writing in Mesopotamia may be useful for comparison with Middle America. Students will probably notice that writing in Middle America was used mostly in connection with religious activities, including a profound concern with the passage and concept of time. At least, that is what the evidence seems to indicate. In Mesopotamia, however, writing seems to have developed in close relation to more materialistic interests, such as record-keeping for trading as well as for lists of kings.

It seems reasonable to imply that the role of religion was vital in the emergence of civilization in Middle America. Not only are the impressive pyramids and temples found at sites throughout the area, but evidence seems to suggest that writing was primarily used for religious purposes, that wars of conquest were at least partly necessary to take captives for sacrifice to the gods, and that large labor forces were available to build and maintain ceremonial centers as well as the cities in the central highlands.

CHAPTER 6

By now your students have had a chance to think about how they might explain the emergence of civilization. They are ready to make another, quite difficult, step toward understanding that process. The aims of this chapter are:

1. To establish that no one single cause is responsible for the development of civilization.
2. To deepen the students' perception of the regularities in the emergence of civilization.
3. To clarify the multiple line interpretation of the development of civilization.

It is clear, from these three goals that the work of the chapter will be founded upon the work the students have done up to this point. In previous chapters they have found and compared stages of development and characteristics common to the early civilizations. They have not been allowed to ask any "why" questions such as:

why did civilization emerge?
what caused civilization to develop?

Although such questions are stimulated by the nature and subject of the text, they are not part of the concern of this unit. Such apparently simple, forthright questions it would seem, ought to be properly the ones to be considered. But such questions are deceptive in their seeming simplicity and forthrightness. Such questions as "why did civilization emerge?" were asked by the early archeologists during the times when men thought that prime causes and first principles were ascertainable by an examination of apparent effects. Fortunately for the development of social science--but unfortunately for our peace of mind--archeologists are now concerned with tracing the lines of development within the early civilizations. In other words, archeologists are more concerned at this time with understanding the processes of the development of the early civilizations. They have stopped for the present trying to apply any particular philosophy to explain why the civilizations did develop. This subtle change in purpose reflects the change in the historical context in which archeologists now work. This is not to suggest that archeologists would not like to know why civilization emerged. But it is now generally believed that there is no single cause for the emergence, and furthermore, that if causes are discernable, they are inextricable from the developmental process itself. That is why the process must be studied at more and more profound levels.

That is all very well for archeologists. Thirteen-year olds want answers. They want to know why things happen and they want to know that they have the information necessary to do their homework properly, pass a test, and get a good grade for their work.

While a certain amount of anxiety and uncertainty is a useful part of the learning-teaching relationship, students need to know that it is possible to be successful. And yet with such subtle goals and error lurking at every corner, it would be very easy for students to conclude this unit on a discouraging note. These obstacles might be overcome if the students can be helped to discover the subtleties and to see and avoid the pitfalls through their own efforts.

The text begins with two single cause theories. These theories, although discredited, can be useful tools. They indicate an evolution in archeological understanding, and if the students themselves can show the inadequacy of these theories, they will have shown themselves that:

1. Any one cause is not adequate explanation for so complex a development as civilization.
2. In order to understand a complex of causes in the development, it is necessary to understand the complex nature of the development itself.
3. The "why" questions they want to ask are not useful at this time.

4. They need to ask some other sort of question, such as "in what manner" or "how" did civilization develop.

5. This type of question is a more profound expression of the lists, charts and questions they have been dealing with throughout the unit.

It would seem then that the first thing to do is to let the students read about the first two theories--up through the middle of page 3 in the text--and try them out for themselves to see if they do explain the emergence of the early civilizations.

The racial theory can probably be demolished quickly and without much difficulty. Both the wide racial diversity of the earliest civilizations and modern biological knowledge disprove it. A very effective method is to invite the biology teacher in your school, a well-informed senior, or an authority from outside the school to explain the scientific refutation of the theory of racial superiority.

Physical environment as the prime cause for the emergence of civilization is more difficult to disprove--but it also is more useful for our purposes. To many students it is obvious that the physical conditions either allow or prevent the development of civilization. In a very broad general way that comfortable approach may have some validity. But it is too broad and too general and it requires too many exceptions and qualifications.

You might begin by ascertaining whether the students know what is meant by the term "physical environment." There are probably some students in your classes who would still include buildings. Sometimes the term natural physical environment helps to clear up that kind of confusion. They need to understand that by physical environment we mean factors like soil, terrain, rainfall, length of growing season, altitude, and location. Then you might ask them to glance through their notes or through the text for a few moments to find out what physical environmental features are common to all the civilizations and therefore could be seen as the cause for their emergence. This could be assigned as homework, but should be done before the students are asked to read any further in the text. Your students will probably find that the civilization developed in nearly every conceivable sort of physical environment--everything from the dense jungles of the Yucatan to the arid river banks of the Nile with their flood-water irrigation. The persistent and perceptive student will probably not give up so easily. He might point out that although these environments include many differences, they also include some conditions common to all the sites, and therefore these could be a cause of the development. You are lucky if you have a student bright enough to suggest that. It gives you the opportunity to help the class develop the distinction between an important or necessary factor such as the availability of water and a prime cause. The availability of water is helpful and necessary, but it is not a cause of the development of civilization. At best factors in a physical environment can be seen as part of a highly complex causal relationship.

When your students have suggested a few factors such as the availability of water, as causes of the development of civilization, you might ask them to note the difference between something which might cause the emergence of civilization, and some combination of factors which may be necessary or helpful conditions in the development. Or you might ask them:

> If the physical environment causes civilization, why has civilization not developed in places which have physical environments similar to those places where civilization has developed?

Even after trying to answer that question, there might still be some dissenters. If there are they will provide the impetus for carrying the work even further. Although they will probably be ready to give up on the matter of physical environment, they may very likely still feel quite sure that somewhere there is something which caused civilization--and they want to or they think they ought to know what it is! At this point ask them to tell you what else they think might be the cause for the development of civilization. It is possible that someone will suggest that people caused it. If no one else in the class thinks of the obvious rejoinder, you might ask why, if people are the cause, hasn't civilization developed wherever there are people?

And so it will go with as many causes as they can think up. Even inventive thirteen-year olds run out of ideas eventually. It is probably best to let them exert all of their efforts and try out every possibility they can think of. Then they will be more likely to be the ones who say that there doesn't seem to be one principal factor responsible for the gorwth of civilization.

"Well then, what are we looking for?" they might demand, quite legitimately. At this point it might be opportune to suggest that they read the rest of Chapter 6. They will now be able to do so with a much more sophisticated understanding of the role and rejection of the first two theories presented there.

The third theory presented is more complex, but with good foundations up to this point, it should present no serious difficulties. In addition to reading the chapter, you should ask them to jot down for homework:

1. In what way the irrigation theory differs from the first two theories presented.
2. Does this theory provide an adequate explanation of the emergence of civilization?

The next day's discussion then would begin with those two questions. The first can be answered simply with the statement that this theory emphasizes the importance of a series of technical, social, and political activities, although it still focuses on one primary cause. The second question is more difficult. It might be helpful to have the entire class work on it for a while together. One student might be asked to give his answer to it. Others might then comment, criticize and, hopefully, ask questions about it.

Through this method it should be possible to achieve general recognition of the limitations of the theory:

1. There is not enough evidence to support the assumption that all six civilizations used irrigation.

2. In those civilizations for which there is evidence of irrigation, the evidence does not show that civilization developed as a result of irrigation. There seems to be some evidence that suggests that large-scale irrigation was possible only after the appearance of centralized authority and other characteristics commonly associated with civilization. In other words: effective, large-scale irrigation came after the emergence of civilization.

Since most students have probably never even seen an irrigation system, they may have difficulty in recognizing just how complicated (beyond its most elementary form) the procedure is. It might be helpful, then to use slides and other reading and visual sources to help to see the difference between the personal, local arrangement between a couple of farmers to share the water supply, and a whole population dependent upon the maintainance and distribution of a water supply system.

If the preceding work has been successful, you will have accomplished the first aim of the chapter--you will have rooted out the stubborn inclination to cling to a simple explanation for the development of civilization. It is essential that students extricate themselves from such preconceptions in order to be receptive to the new direction suggested by Steward.

The next step is to help the students understand what Steward says. One way to do that is to ask them to:

1. Read that section of the chapter.

2. Jot down a list of the most important ideas in Steward's theory.

3. Jot down a few sentences showing in what way Steward differs from the irrigation theory.

There will probably be little disagreement about the ways in which Steward differs from the irrigation theory. That can be gotten out of the way quickly, but should be stated explicitly, and there should be an opportunity to clear up any remaining cobwebs. Then you might ask the students to contribute their ideas to a list on the board, of the important points of Steward's theory. The list should include these ideas:

1. Each civilization evolved through a series of stages.
2. Each stage included a number of lines or elements.
3. The same series of stages may have occurred in each of the six civilizations.
4. These stages may have occurred in the same order in all six civilizations.
5. The later stages show more complexity than the earlier ones.
6. There is a cause and effect relationship within each stage and in the sequence of stages.

As the list develops, you might want to ask for examples from time to time. That is, if a student suggests there is a regular order in the occurrence of stages you might ask him for an example of such order in the civilization he specialized in. This will provide some review and application for the students, and will give you an opportunity to see how well they have absorbed the ideas.

It will most likely require an entire class period to get the list on the board. It would be good to have the students make a copy of it for their own use. While the list is still on the board, you might ask them if it seems at all familiar. Does it remind them of anything else they've met in this unit? Your more perceptive students will probably catch on fairly quickly:

> There is a striking similarity between what Steward says and two of the three objective-questions we have been working with all through the text.

If someone comes right out and says it, it would probably be wise to ask him to show in Chapter 6 the places that make Steward sound like the objective-questions. The student will doubtless point to the paragraph beginning in the middle of page 3 and continued on page 4. If possible you should have some of the students try to explain the similarity they see in those paragraphs. This may help finally to get the slower students to see and accept the difference between the obvious, comfortable, single cause theories, and the more difficult, distressing theory put forth by Steward. It also may be the best way to get them to see the difference between theories which claim to get a causation, and a theory which sees causation as an element in a developmental process. If any questions or discussion are forthcoming, they will probably be tentative and uncertain, but invaluable in helping to focus on the nature and content of Steward's theory.

The final homework could be a writing assignment. Their answers need not be long but they should exhibit the best English style they are capable of as well as a knowledge of the information and ideas contained in the book. Suggested questions might be: What have we found out about the emergence of civilization ? Have we found out everything ? Have we found out why civilizations emerged ?

The teacher might give aid to those students who will need it by suggesting that the first question implies that we write about the process or manner in which civilization emerged. Such a process involves stages or levels of culture which evolve from the simple and relatively uncomplicated to the increasingly complex. An answer to the second question might start with the problem of evidence and interpretation which confront the archeologist. To help with the third question the teacher might simply ask if Steward's theory is an attempt to explain process rather than answer the "why" question.

Handbook: Chapter 6

Approximate daily schedule

Day 1

Students read those sections of the chapter (pages 1-2) which consider the racial and the physical environment theories. Do these theories explain the emergence of civilization? Ask students to restate racial theory in their own words. Why did the theory gain wide support in the 19th century? What are the theory's weaknesses? Why is it still widely believed today?

Day 2

Discussion of the physical environment theory. Clarification of the meaning of the term. Students to prepare for homework an answer to the question: "What physical environment features are common to all of the civilizations you have studied and could therefore be considered as causes for their emergence?" Distinction made in discussion between prime cause and a necessary or helpful condition. Allow students to seek and fail to find one single adequate cause for the emergence.

Day 3

Read section on irrigation theory (pages 2-3). For homework students to write down the way in which the irrigation theory differs from the first two theories presented in the chapter and their view about the adequacy of this theory as an explanation for the emergence of civilization. Class discussion to elucidate the strengths and weaknesses of irrigation theory. If you can, find slides and other reading and visual sources to make clear the difference between the simpler forms of cooperative irrigation schemes which may have been discussed when the chapter on Mesopotamia was read with the more complex forms of irrigation practiced at a later date in Mesopotamia as well as in Peru and Egypt.

Day 4

Students read Steward's theory, (pages 3-4), noting on paper the most important ideas in his theory and the ways in which his theory differs from the irrigation theory. In class, briefly dispose of second question and then concentrate upon establishing intelligent blackboard list of Steward's major ideas, with examples to illustrate each if possible.

Day 5

Students to write brief answers to three questions as basis for final class discussion on the emergence of civilization: What have we found out about the emergence of civilization? Have we found out everything? Have we discovered why civilization emerged?

Glossary*

To the student: this glossary is not intended to take the place of a dictionary. There may be many words in the book which do not appear here and your dictionary will have to be consulted. This glossary has two purposes: to give you a quick, reliable definition which is appropriate to the context of this book; to provide you with a list of terms (and their meanings) which are often used by archeologists but which may not appear in a standard dictionary.

agriculture (Latin ager, field, and cultura, cultivation)—The science of cultivating the soil, producing crops, and raising livestock

Agricultural Revolution—The radical change that gradually took place in the habits and customs of man as he abandoned food collecting and began food production

alluvium—Clay, silt, sand, gravel or similar material deposited by rivers

anthropomorphic (Greek anthropo, human being, and morphos, having the form of)—ascribing human characteristics to non-human things

antiquarian—one who collects, studies and is usually emotionally involved with the relics and monuments of ancient times

archeologist—one who studies the material remains of past human life and activities

artifact—man-made objects, essential to the archeologist's reconstruction of man's past

artisan—one trained to manual dexterity or skill in a trade, such as a weaver or carpenter

assemblage—all of the things from one level of a site which give the archeologist an idea of how the people of a particular culture lived

carbon 14—1) a radioactive heavy form of carbon; 2)name of a process by which organic material can be dated catalyst—usually used with reference to chemical reactions, but in a broader sense, any new agent or element which causes a rapid increase in the rate of change within a culture and may also affect the direction of a culture

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*To the teacher: this glossary is for the students, and will eventually be bound in the book. For the present, maybe you can make this single copy available — or have it duplicated.

ceremonial center—a place, distinguished by the importance of the religious ritual held there. Distinct from a city or town in that the population of the center greatly fluctuates and that the nucleus of the community are priests or temple officials.

citadel (Old Italian cittadella, little city)—a fortress that commands a city

city state—an independent state consisting of a city and surrounding territory

civilization—1)a relatively high level of cultural and technological development; specifically: the stage of cultural development at which writing and the keeping of written records is attained (Webster's Seventh New College Dictionary, 1963)

2) "To me civilization means urbanization: the fact that there are cities. It means a formal political set-up—that there are kings or governing bodies that the people have set up. It means formal laws—rules of conduct—which the government (if not the people) believe are necessary. It probably means that there are formalized projects—roads, harbors, irrigation canals, and the like—and also some sort of army or police force to protect them. It means quite new and different art forms. It also usually means there is writing. (The people of the Andes—the Incas—had everything which goes to make up a civilization but formal writing. I can see no reason to say they were not civilized.) Finally...civilization seems to bring with it the dawn of a new kind of moral order." (Prehistoric Men, Braidwood, pages 145-146.)

corvée—a compulsory labor system in which men contributed their personal labor in lieu of taxes

criterion, pl. criteria (Greek kritērion, from krinein, to judge, decide)—a standard on which a judgment or decision may be based.

culture—defined on page 2 of the text as "the way the members of a group of people think and believe and live, the tools they make and the way they do things."

cuneiform—a form of writing distinguished by its wedge-shaped characters

curvilinear—consisting of or represented by a curved line

cylinder seal—a cylinder, usually of stone, containing an engraving depressed below the surface of the materials, so that an impression from the design yields an image in relief (see illustrations in text, pages 52 and 54.)

datum, pl. data—factual materials used as a basis especially for discussion or decision domestication—the modification of varieties of wild plants and animal life to the immediate advantage of man

emergence—the act of emerging, to come into being through evolution

environment, physical (or *natural* physical environment)—factors such as soil, terrain, rainfall, length of growing season, altitude, and location which affect the form and survival of plants and animals

evolution—a process of continuous change from a simpler to a more complex condition

floodplain—1)level land that may be submerged by floodwaters
2)a plain built up by annual depositing of silt from floods

frieze—a sculptured or richly ornamented band (as on a building)

hieroglyphics—a system of writing mainly in pictorial characters with each character equivalent to a phonogram. See *phonogram*.

high culture—see *culture*.

hilly flanks—area of southwestern Asia between 1250-3000 feet above sea level, with average annual rainfall 20-30 inches, with abundant quantities of grassland.

history—the study of man's life since the discovery of writing which relies upon written sources to explain past events

homogeneous (Greek *homos*, one and the same, plus *genos*, kind)—sometimes used to describe "culture," indicating that everyone in a particular society does more or less the same activities—a culture in which there is very little specialization of labor.

ideograms—a picture or symbol used in a system of writing that represents *not* the object pictured but some thing or idea that the object is supposed to suggest

indigenous—native to a particular region or environment

inventory—a list or catalogue of things in use at any given time

loess (German *löss*) an unstratified usually buff to yellowish brown loamy deposit found in China, North America, and Europe and believed to be chiefly deposited by the wind

manorial economy—a type of economic organization characterized by presence of self-sufficient rural estates, involving a set of reciprocal obligations between workers and the estate owners or managers

monumental architecture—buildings or public works of great size, magnificence and splendor; not to be confused with *monuments*, like the Washington monument or the Lincoln Memorial neolothic—the period when men made stone tools by grinding one stone against another. Since some cultures continue to make tools in this way the period cannot be said to be concluded. In many areas of the world this method was eventually superceded by the use of metals, first copper or bronze, later iron

obsidian—volcanic glass, useful raw material for microlithic blades which can be used to cut grain

paleolithic—the earliest period when man *made* stone tools, principally by chipping one stone against another

phoneme—one of the smallest units of speech that distinguish one utterance from another in a language (the p of English *pin* and the f of English *fin* are two different phonemes.)

phonogram—a character or symbol used to represent a word, syllable or phoneme

prehistory—that period of man's life before the discovery of writing

pre-literate—before the development of writing

proto-literate—first or earliest stage of writing

quipu—a device made of a main cord with smaller varicolored cords attached and knotted; used by Incas for calculating and record keeping (see illustration in text, page 62)

secular leaders—as distinguished from religious leaders, men who held power and exerted influence because of their position in the army or commerce or other temporal affairs

sherds—broken pieces of pottery

site—a place occupied by people in ancient times, now the scene of excavation by archeologists

stratum, pl. strata—a layer of a site in which archeological materials (such as artifacts, skeletons, and remnants of dwellings) is found after excavation

syllabary—a series of written characters each one of which is used to represent a syllable

terra-cotta (Italian *terra cotta*, baked earth)—a glazed or unglazed fired clay used for statuettes and vases

theocracy—government of a state by immediate divine guidance or by officials regarded as divinely guided

town (Old English *tūn*, enclosure, village, town; akin to Old Irish *dūn*, fortress)—a compactly settled area usually larger than a village but smaller than a city

urbanization—the quality or state of becoming or being a city village farming communities—a very small reasonably permanent settlement of families who support themselves by farming the land around the village. In size and function similar to a hamlet.

world-view—"A man's idea about the universe—'The organization of ideas which answers to man the questions: Where am I? Among what do I move? What are my relations to these things?'" (text, page 26)

ziggurat—a temple tower consisting of a lofty pyramidal structure with outside staircases and a shrine at the top

Pronouncing Gazetteer

Chapter II

Tepe Asiab	teh´ - pay ah´ - see - ahb
Tepe Sarab	teh´ - pay sar´ - ab

Chapter III

Anu	ah´ - new
Ekur	ay´ - curr
En-ki	en´ - key
Enlil	en´ - lill
Eridu	ā´ rĭ • do͞o
Halafian	ha - lá - fee - an
Hassuná	ha - sóon - a
Iraq	ear - rook
Jarmo	jar´ - mow
Kurdish	cur´ - dish
Lagash	lā´ - găsh
Lugalzagesi	lew - gal - za - guess - i
Nippur	níp - poor
Samarra	sah - máh - rah
Siyalk	see´ - yalk
Ubaid	oo - búy - id
Uruk	ur´ - uk

Chapter IV

Ascope	as - có - pay
Atacama Desert	ah - tah - kah´ - mah
Castillo	cas - teel´ - yo

Chapter IV Cont.

Chan Chan	chan chan
Chavin de Huantar	chah - vin´ day wan´ - tar
Chicha	chee´ - cha
Chimu	chee - moo´
Cuzco	cooz´ - co
Gallinazo	gal - yee - nah´ - so
Huaca de la Luna	wacka day lah loona
Huaca del Sol	wacka dell sole
Huaca Prieta	wacka pre - ate´ - a
Huari	war´ - i
Lake Titicaca	ti - tee - cah - cah
Moche	mow´ - chay
Mochica	mow - cheek´ - a
Nazca	naaz´ - ca
Paracas Necropolis	par - ah´ - cahs ney - crop´ - o - liss
Pizarro	pih - zar´ - row
Tiahuanaco	tea - won - a´ - co

Indus Valley

Aryans	air´ - ians
Harappa	hah - rap´ - pa
Pakistan	pock´ - is - tahn
Piggott	pig´ - got
Mohenjo - daro	mow - hen - jo dar´row

Egypt

Amratian	am - race´ - ian
Atum	a´ - toom

Egypt Cont.

Byblos	bib´ - los
Fayum Period	fay´ - yum
Gerzean	grrr - zean´
Horus	hō´ - rŭs
Jemdet Nasr	jem - debt nasser
Khufu	coo´ - fu
Malachite	mala - kite´
Menes	men´ - ace
Narmer	nar´ - mur
Nekhebu	neek´ - eh - boo
Nubian	new´ - bian
Osiris	o´ - sirace
Ptah	tah
Re	ray

China

Anyang	ahn - young
Honan	hoe - nan
Kansu	kahn - sue
Li Chi	lee she
Lung Shan	loong shan
Pan Shan	pan shan
Shang	shang (a as in father)
Shansi	shan - see
Shensi	shen - see
T'ao	dao

China Cont.

Ti	tee
Yang Shao	yang - shah´ - o

Mesoamerica

Aztecs	as´ - techs
Chiapa de Corzo	chee - ápa day cour - so
Chichen Itza	chi´ - chen its - a
Chichimecs	chi´ - chi - mexs
Chinampas	chi - nahm´ - paz
Copan	co - pan´
Mitla	meet´ - la
Monte Alban	mon´ - tay all - bán
Oaxaca	wah - hock´ - a
Olmec	all´ - meck
Palenque	pal - enck´ - kay
Peten	pay - ten´
Popocatepetl	poe- poe´- ca - tay´ - petal
quetzal bird	ketz - al
Quetzalcoatl	ketz - a - cóat - l
Tamaulipas	ta - mow - leap - us
Tehuacan	tay - wa - khan´
Tenochtitlan	ten - oach - tit - lan´
Texcoco	tesh - co´ - co
Teotihuacan	teo - tee - wa - khan´
Tikal	tee - coll´
Tlatilco	tla - till´ - co
Toltecs	toll´ - techs

Mesoamerica Cont.

Tula	too - la
Uaxactun	wah - shock - tun′
Uxmal	oosh - mal

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